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1936 Promises New Opportunities

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CONDITIONS in Our Industry

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JANUARY
1936

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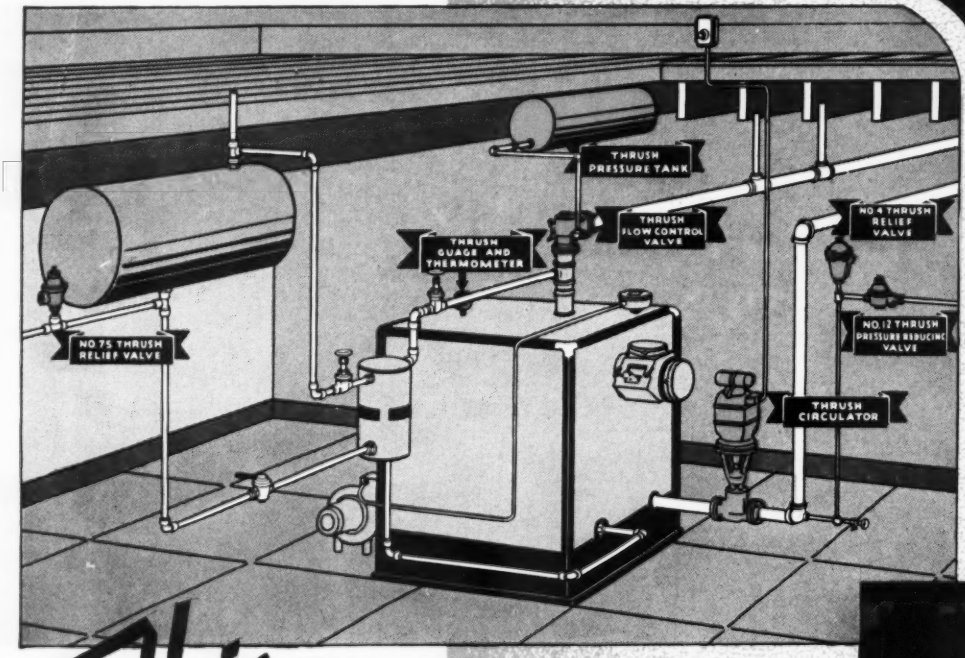
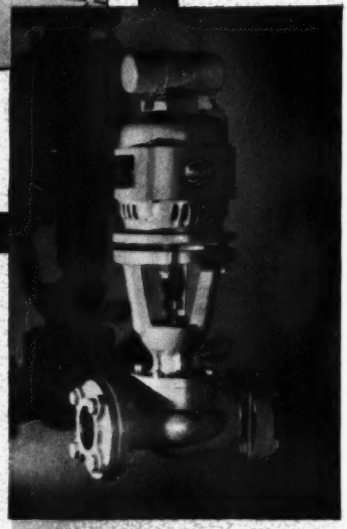
GOOD NEWS!


THRUSH PRESSURE TANK
THRUSH FLOW CONTROL VALVE
THRUSH GUAGE AND THERMOMETER
NO 4 THRUSH RELIEF VALVE
NO. 12 THRUSH PRESSURE REDUCING VALVE
NO 75 THRUSH RELIEF VALVE
THRUSH CIRCULATOR



This COMPLETE THRUSH FLOW CONTROL SYSTEM CAN BE INSTALLED FOR

20% *to* 25% LESS

THAN AN ORDINARY GRAVITY JOB!

NOW *you can get more and better heating jobs!* Think of it! You can offer your customers a truly modern, completely automatic Summer-Winter hot water heating system *at lower cost than your competitor asks for an ordinary gravity system.* It's true! Thrush Flow Control permits the use of much smaller pipe and reduces labor costs so much that you can install radiator heat today for even less than the cost of a warm air job with domestic hot water supply included. *Ask for more facts now.*

H. A. THRUSH & COMPANY • PERU, INDIANA

Thrush FLOW CONTROL HOT WATER HEATING SYSTEM

MAIL THIS COUPON NOW

Date .....

H. A. Thrush & Co.,
Box 459, Peru, Ind.

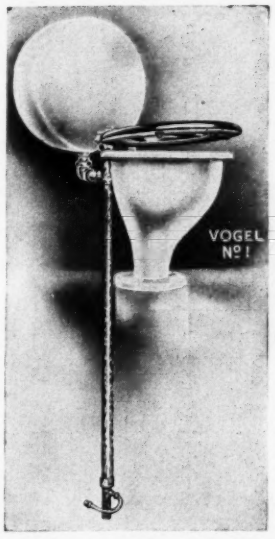
Please send booklet describing Thrush Flow Control Heating System and its advantages for use with automatic firing devices.

Name .....

Address .....

City ..... State .....

VOGEL PATENTED SALES are PROFITABLE



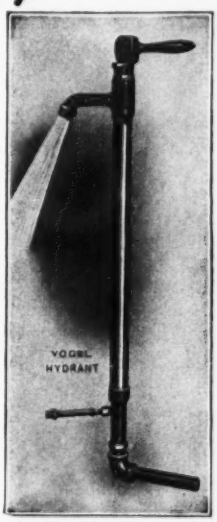
Vogel No. 1—Many thousands in use in all parts of the country. Cannot freeze, no matter how cold the weather.

So why not sell more VOGEL products

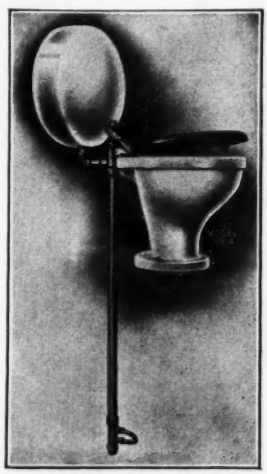
HERE'S a good resolution for 1936 and one which is easy to keep. Push those products on which you feel sure you'll make a profit, and you know from experience that **VOGEL** Products are profitable for plumbers to handle.

We do all we can to make it easier for you to sell **VOGEL** Products, by supplying you with folders, blotters, etc., imprinted with your name and address. Tell us how many you need and use them to build up your **VOGEL** sales and at the same time build up your profits.

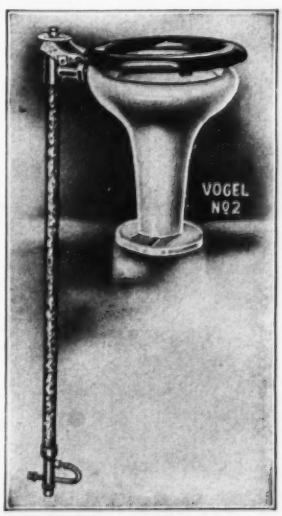
JOSEPH A. VOGEL COMPANY
Wilmington, Del. St. Louis, Mo.



Vogel Frost-Proof Hydrant. For garages, yards, playgrounds, farms and dairies, etc. Nothing to stop up. Will never freeze.



Vogel No. 4—Frost-Proof. China bowl, top supply. Same valve as the Vogel No. 1. As good looking as a bathroom closet.



Vogel No. 2—Frost-Proof Closet. A durable, low-priced outfit. Supplied with enameled rim hopper and reinforced hardwood seat.

VOGEL PATENTED

Frost-Proof Products

643100

DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising

January, 1936

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Whole No. 2013

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Contents

Editor's Page 48
Our Industry—1936 Promises New Opportunities 51
Business in General 52
Conditions in Our Industry 53
Highlights of 1935 in Review 54
FHA—One Year Later 56
250 Loans; 25 Percent for Our Industry 57
Reinspection of Federal Buildings 58
Water Heating Campaign 59
How Ferguson Meets d. t. u. 60
Old Joe's Bathroom 61
Survey Shows Practices in Management of Trucks 62
Why Does a Pump Pump? 65
Income Taxes 67
3,000 Visitors; 256 New Leads 68
40 Different Elevations Are Covered 70
Boiler and Burner Controls 72
Merchandising Counsellor 75
Continue FHA 77
Automatic Controls for Air Conditioning 79
Another Earl Brown Trouble Job 83
Contractor Sells Personalized Plumbing 85
Automatic Heat and Air Conditioning Reference Tables 87
Questions and Answers 94
Business on Parade 100
News of the Supply Field 106
Recognition 117
News of the Trade 119
Obituaries 133
New Trade Literature 135
Convention Dates 136
Women's Activities 137
New Ideas in Patents 141
Products for Dealers 146
New Information and Aids to Sales 154
Index to Advertisers 170

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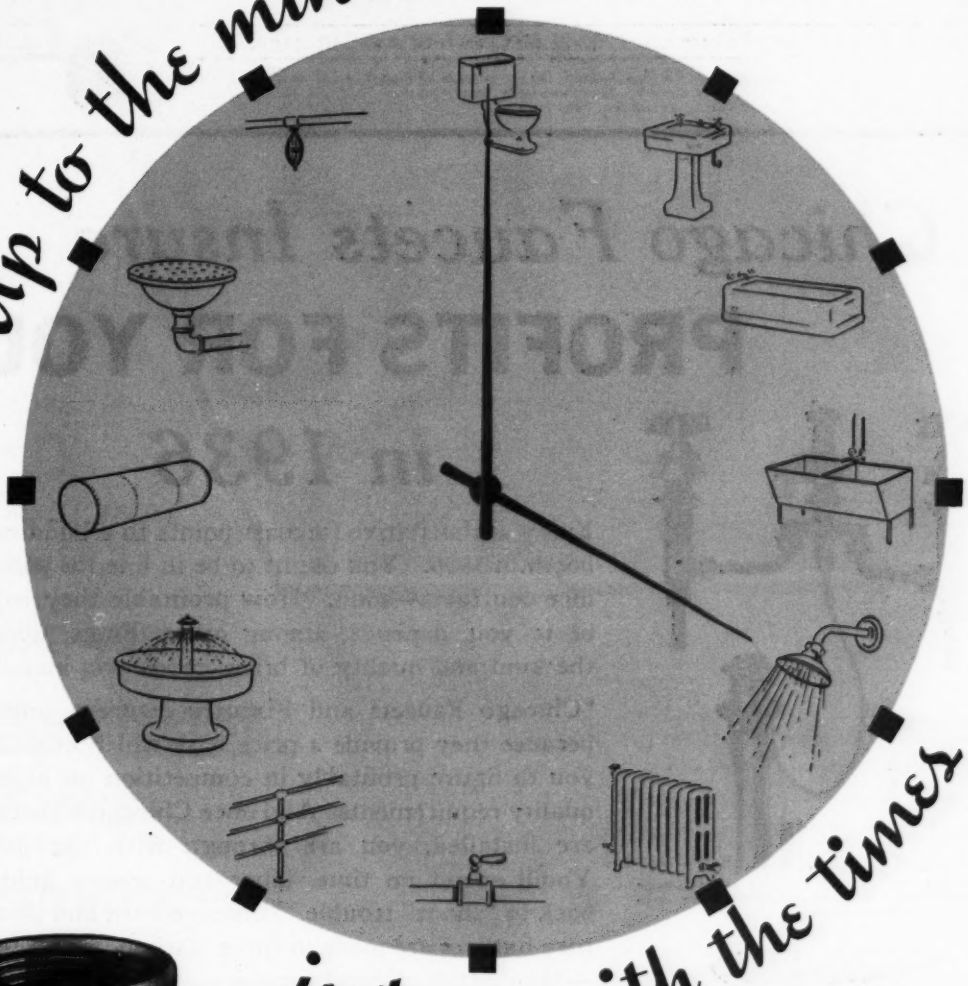
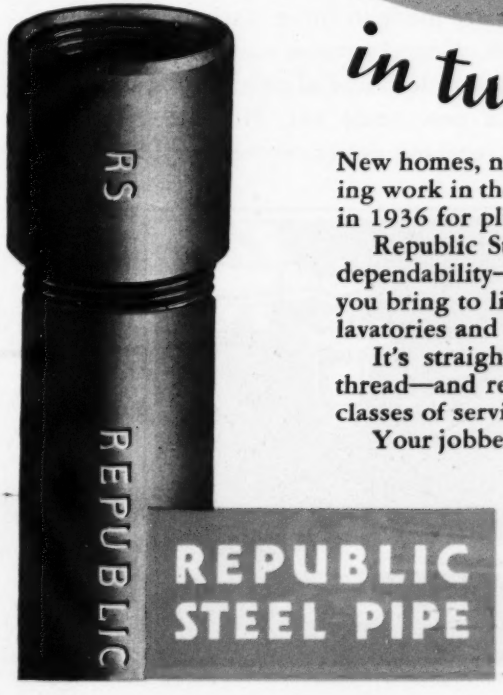
Up to the minute . . .



in tune with the times



REPUBLIC STEEL PIPE

New homes, new plants, new buildings of every type, plus modernizing work in thousands of old structures, means a worth-while market in 1936 for plumbing and heating contractors.

Republic Steel Pipe—long known to the trade for its all 'round dependability—will be in jobbers' stocks to help you bring to life the many boilers, radiators, sinks, lavatories and other fittings you sell and install.

It's straight—sound of weld—easy to cut and thread—and resistant to corrosion for all ordinary classes of service.

Your jobber has it—or can get it for you quickly.

REPUBLIC STEEL

Republic Steel CORPORATION

GENERAL OFFICES · · · CLEVELAND, OHIO

CHICAGO FAUCET NEWS

Issued Monthly by The Chicago Faucet Co., 2700-22 N. Crawford Ave., Chicago, Ill. Vol. 4, No. 3

All parts of Chicago Faucets subject to wear are incorporated in a standardized, removable, interchangeable operating unit and are as easily renewable as an electric light bulb.

Chicago Faucets Insure

PROFITS FOR YOU

in 1936

No. 645 Chicago Econochrome Concealed Lavatory Fixture with Quaturn valves. A typical example of high quality at a moderate price. Has the famous Flexrod pop-up waste. All-metal, four-arm handles, round pattern escutcheons. Brass bodies and spout. Exposed parts heavily chromium plated. Will add to beauty of any lavatory and give lifetime service.

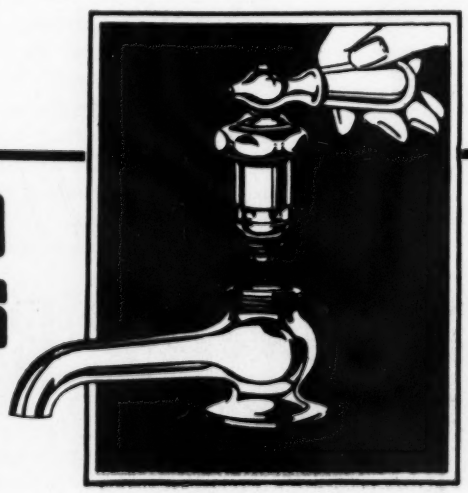
No. 444 Chicago Swing-spout Sink Faucet. Recognized in the trade as an outstanding value. Always a "hit" with users. A wonderful faucet for stock and counter sales.

Every authoritative forecast points to a building boom in 1936. You ought to be in line for some nice contracts—soon. How profitable they will be to you, depends, among other things, upon the kind and quality of brass goods you install.

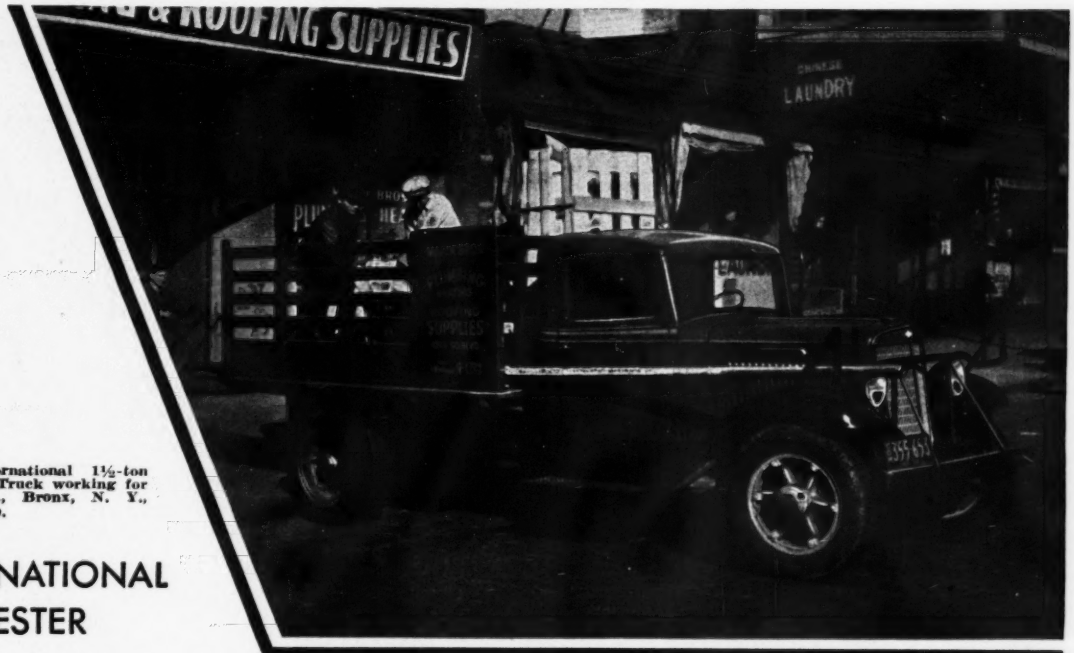
¶Chicago Faucets and Fixtures insure a profit because they provide a price base which enables you to figure profitably in competition on high-quality requirements. And once Chicago Faucets are installed, you are through with the job. You'll spend no time, labor and money going back to "shoot" trouble. ¶Chicago bath and lavatory fixtures are made in three distinct price lines —Manhattan, Econochrome and Artchrome — which afford a wide range of pricing possibilities. Refer to our new price list, No. 115. If you haven't yet received yours, write for it at once.

CHICAGO FAUCETS

Are Profitable to Sell Because They Give Perfect Satisfaction



The standardized, interchangeable Quaturn operating unit is used in all Chicago Faucets and Fixtures. It contains all parts subject to wear.



Right: International 1½-ton Model C-30 Truck working for Marin Bros., Bronx, N. Y., supply house.

INTERNATIONAL HARVESTER

Thanks you for the Biggest Increase in Registrations Made by Any Leading Truck . . . and looks forward to another big year of transportation progress.

INTERNATIONAL TRUCKS

Note: R. L. Polk & Co. reports 74% gain in International Truck registrations—and 26% gain in registrations for the entire truck industry—for the first ten months of 1935 over the same period in 1934.

THIS BIG INCREASE in International registrations climaxes a long, steady record of International Truck popularity. For more than a quarter-century business men have come to International Harvester when they have needed the most reliable truck transportation and the soundest kind of truck economy. International's position in the industry has long reflected this well-established, growing popularity.

When the demand for such a well-established truck is increased 74% in any year, *that is news for all truck buyers.* And it is a guidepost for the man who wants the most for his truck money. Go to the nearby International Truck dealer or Company-owned branch and see for yourself just why International Truck registrations have increased 74% while registrations for the entire truck industry have increased 26%.

INTERNATIONAL HARVESTER COMPANY
(INCORPORATED)
606 So. Michigan Ave. Chicago, Ill.

The Most Complete Line of Trucks on the Market . . . from Half-Ton Light-Delivery to Heavy-Duty Six-Wheelers. . . .

DON'T MEET COMPETITION *Beat it!*

Goulds Shallow Well Water Supply System—C-2542. 250 gallons per hour capacity.

NEVER before have people been so thoroughly aware of the advantages of running water . . . never so ready to invest in hours freed from the pump handle, in increased yield from land and stock. The dealer who sells Goulds "CID" Water Supply Systems is ready to profit to the full from this market, ready to beat all competition.

The Goulds "CID" line is complete. Shallow and deep well systems are manufactured in sizes to meet every capacity requirement. The essentials of capacity, dependability and price are carefully balanced. No one feature has been sacrificed to gain another. Fine workmanship, the best of materials and efficient design assures unfailing service year after year. Yet prices are surprisingly low. Customers recognize these advantages. Since 1931 Goulds sales have increased steadily each year.

Discounts on Goulds "CID" Water Supply Systems assure maximum profits. Here's the line to get the business. Write today.

GOULDS PUMPS, INC., 210 Fall Street, Seneca Falls, N. Y.

GOULDS

5838

KAINER

GOVERNORS

FOR HOT WATER HEATING SYSTEMS

De Luxe Model B-2

Measures of Value

YOU make no mistake when recommending selling and installing your selection of this dependable and popular high grade line of Hot Water Heating Specialties which are all made of Special Pressure Bronze to resist corrosion.

From the water induction point of a Kainer Governor which is guarded by a fine mesh monel metal filter screen to the relief discharge, every bit of mechanism and material employed is of the finest possible both as to engineering and quality. Your customers may rightfully expect years of satisfactory service—performance—Kainer Governors are built to deliver — and do.

See Your Jobber or Write for Form No. 35415

ASK ABOUT STANDARD MODEL C-3 AND OTHER KAINER SYSTEMS

If attending the show visit us at BOOTH 415

CONTRACTOR PROFITS

CUSTOMER SATISFACTION

YEARS OF PERFORMANCE

NON-CORROSIVE-DURABLE

KAINER & COMPANY
761 MATHER ST.
CHICAGO, ILL.

Your Name.....

Your Address.....

Your City.....

Start 1936 with the 1936 RUUD GAS WATER HEATER set-up; — new types . . . new sizes . . . new improvements . . . in a complete line for use with all gases, for all operating conditions, for all homes and buildings, for all hot water requirements and for all income classes.

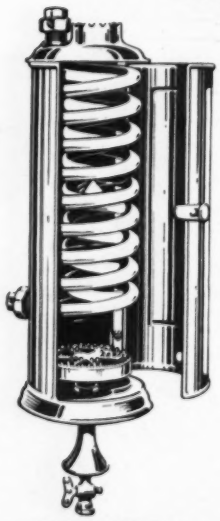
Fill out the blanks above and mail this coupon to us for complete RUUD details.

RUUD MANUFACTURING COMPANY
Pittsburgh, Pa.

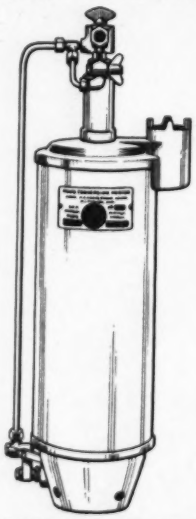
Fill in the blanks above, tear out this coupon and mail it for details of the 1936 line of

RUUD GAS Water Heaters

Four of the Ten Major Ruud Types for 1936

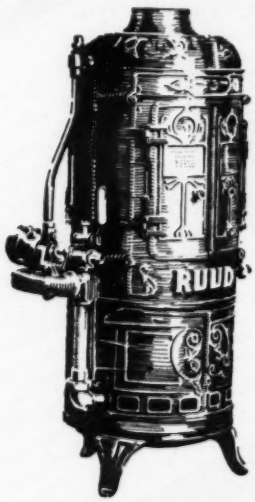


TANK HEATER



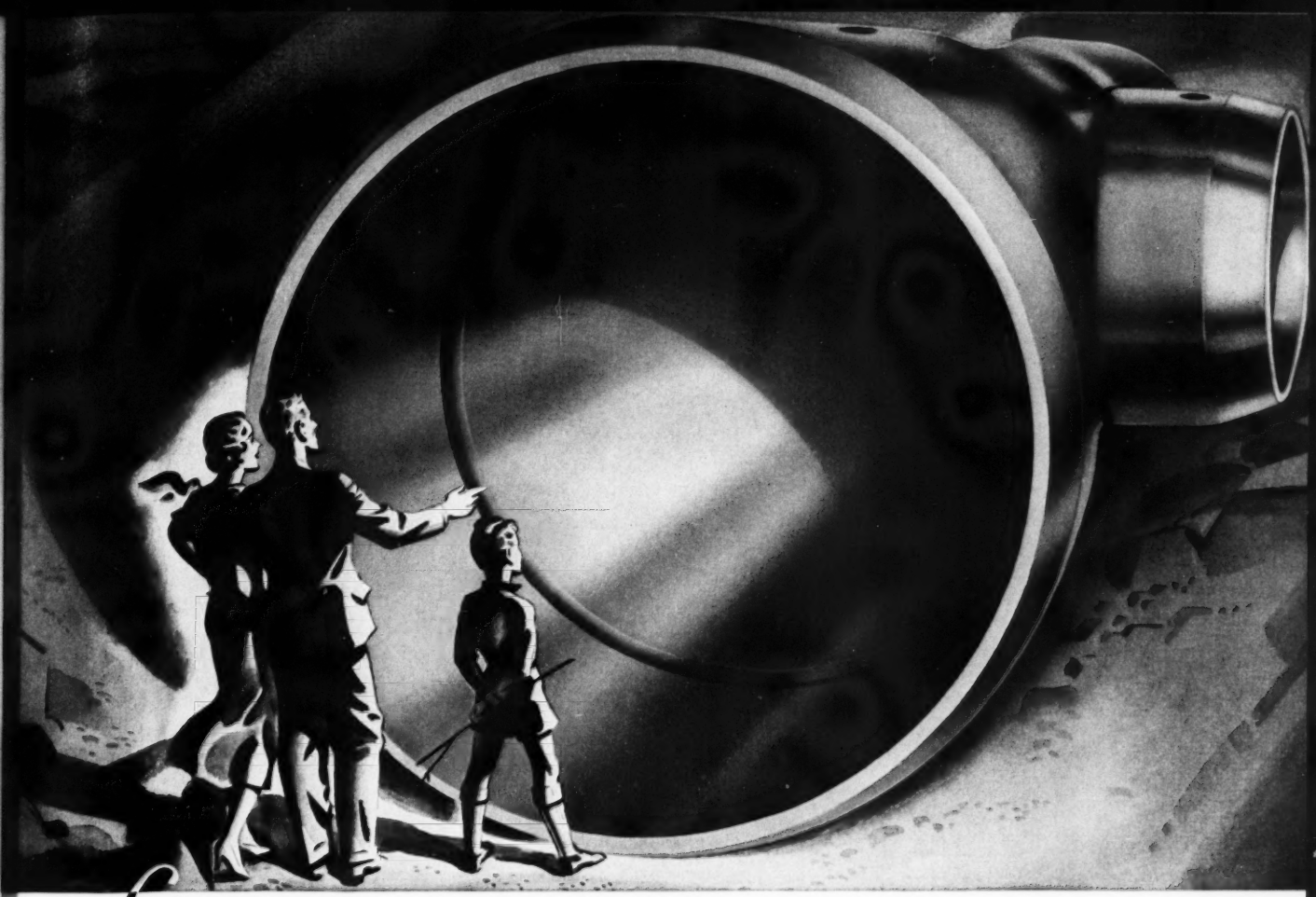
CONVERSION BURNER

AUTOMATIC STORAGE

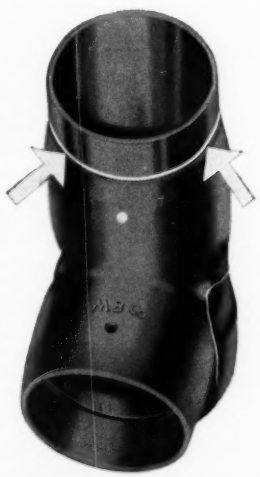


CONTINUOUS FLOW

RUUD QUALITY



Lets take a tour through a STREAMLINE FITTING



FIRST of all we see a taper at the ends of the fitting, then feed holes—and inside—a feed channel. THESE ARE EXCLUSIVE FEATURES OF THE STREAMLINE FITTING. Now note the smooth interior. Here are no depressions, abrupt pipe ends or other obstructions to reduce flow capacity. See also the internal shoulder against which the pipe comes to a stop, positively and evenly—and that the height of this stop shoulder is approximately the same as the thickness of the pipe wall, so that when pipe and fitting is assembled the conducting area is continuous and uniform.

THINK OF THIS

77% of all solder type fittings installed last year in buildings of every kind throughout the United States were STREAMLINE Fittings. Remember, too, that the STREAMLINE Fitting is the original solder type fitting and has the valuable visual inspection feature which no other solder type fitting possesses. It requires the plumber's or steamfitter's skill and tools to install. It cannot be procured from direct-to-you-houses or department stores, but from recognized plumbing jobbers only. STREAMLINE is worthy of your support. It's a fitting that will uphold and build your reputation.

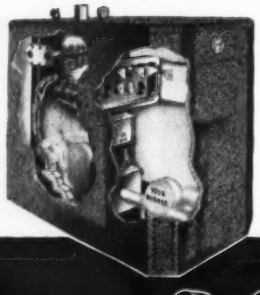
VISUAL PROOF When the plumber or steamfitter makes a joint with a STREAMLINE Fitting and Copper Pipe he can tell at a glance that the joint is leak-proof and permanently tight, by the appearance of the solder as a complete ring at the end of the fitting. It is his visual evidence of work well done.

STREAMLINE
PIPE AND FITTINGS
PORT HURON, **CO.** MICHIGAN
DIVISION OF MUELLER BRASS CO.

KEWANEE

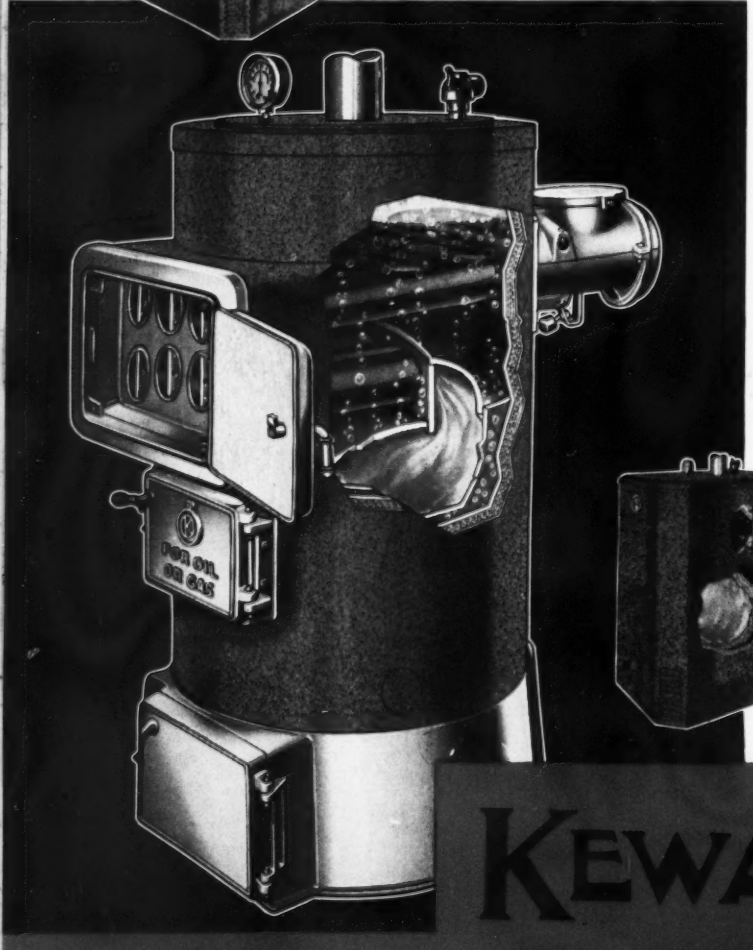
.... to make a Derby Winner

It Takes a Good Horse PLUS a Good Jockey



No matter how good the horse, he can't be a winner unless teamed with a good jockey. Likewise . . . the finest mechanical firing equipment can't do a real job of automatic heating unless it is teamed with a good boiler.

Action photograph of the Berkshire Handicap



Everything a boiler must have to make it a proper team-mate for an oil or gas burner or coal stoker will be found in the Kewanee Round "R" . . . for heating homes or smaller buildings.

Heavy Steel Plate, strong enough to stand the strain of sudden temperature changes caused by the intermittent operation of automatic firing.

Fireboxes Extra Big and High provide space for complete combustion.

Two-Pass Tubes provide a double travel for the gases, holding them in the boiler longer, using all of the available heat.

Kewanee Spinner Blades force the hot gases to "scrub" the tube walls with an unobstructed streamline swirl, transferring more heat to the water.

Large Steam Space insures an ample reserve of dry steam.

Insulated Doors keep heat inside, instead of radiating it out.

Heavier Castings add extra years of life.

Kewanee Copper Hot Water Coil (accessibly fitted inside the boiler—not an extra) provides an ample domestic supply.

And . . . the attractive Round, Square or Regal Jackets have the eye appeal that makes sales easier.

Get the facts of Kewanee performance . . low price . . and easy financing plan.

KEWANEE BOILER CORPORATION
KEWANEE, ILLINOIS
Eastern District Office: 37 West 39th St., New York City
Branches in Sixty-one Principal Cities
division American Radiator and Standard Sanitary Corporation

KEWANEE ROUND "R" STEEL BOILER

A Perfect Team-Mate for Automatic Firing Equipment

Vent-Rite Valves—CONTROL THE DISTRIBUTION OF STEAM In One-Pipe Jobs!

Today Balanced Radiation is unquestionably the greatest accomplishment in steam heating . . . and *Vent-Rite* radiator air valves have made this remarkable achievement possible! *Vent-Rites* with their construction features provide *correctly* balanced steam heating systems . . . *Vent-Rite* air valves can be regulated to meet the exacting requirements of each radiator in the system and with an *exclusive* type of variable venting orifice, which provides an *unlimited* venting range, distribution is positively controlled!

With *Vent-Rites*, low pressures are *freely* vented and "Lagging Radiators" and "Overheating in Spots" are entirely eliminated.

Unlike ordinary air valves, the adjustment feature is not conspicuous and *will not be tinkered with.* To set venting rates, a wire-like tool is required and once set by the heating contractor, *they stay set.* . . . *Vent-Rites* can also be easily taken apart and cleaned when necessary.

Heating contractors everywhere are providing Balanced Radiation with *Vent-Rite* valves and securing results never before accomplished. . . . You, too, can guarantee *your* customers *correctly balanced heating systems.* Use *Vent-Rites* exclusively and prove to yourself that "Balanced Radiation is a fact."

VENT-RITE valves are made in both vacuum and non vacuum types—straight shanks for mains—come-apart construction—float seal against water—close thermostatically under temperature—built-in-quality—guaranteed performance—favorably priced. . . . Carried in stock and sold only through selected recognized wholesalers of heating and plumbing supplies. . . . *Consult with them today—or write to us direct.*

ANDERSON MFG. CO., CAMBRIDGE, MASS.
"PIONEERS of BALANCED RADIATION
Since 1932"

Proof—For three heating seasons, contractors and heating engineers everywhere have been installing *VENT-RITE* Valves on one-pipe systems and have proven to themselves that "Balanced Radiation Is a Fact." MR. G. DIAMOND, heating engineer in charge of the properties of the Fidelity Philadelphia Trust Company, said recently, *"We will use VENT-RITES on all our properties—They've proven themselves to me."* You can prove, too! *that Balanced Radiation is a fact.* Try *VENT-RITES* on your next job—and you'll never use any others. *VENT-RITE* installations are profitable, too.

VENT-RITE

(CONTROLLED VENTING)

RADIATOR AIR VALVES

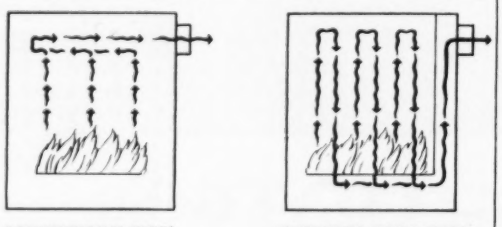
HAVE EXCELLED IN PERFORMANCE THROUGH 3 HEATING SEASONS

CRANE offers Dependable, Economical Heating Systems WITH A DIFFERENCE!

FOR INSTANCE

Sustained Heat

Patented Down-Draft Bars Heat Escape



CONVENTIONAL FLUES "SUSTAINED HEAT" FLUES

The Crane D1 Deluxe Oil Burning Boiler

COMBUSTION GASES flow downward throughout the whole section area of the new Crane D 1 Oil Burning Boiler before converging at the back to rise to the outlet. Thus, every section in the boiler is in constant contact with active heat on three of its four surfaces.

When the burner shuts off, the heat is literally trapped. Escape up the flue, causing standby loss, is thwarted. This is the "Sustained Heat" today's homeowner is hearing about and is asking for—because he knows it means less oil in heating his home.

Every Crane boiler has been designed and constructed, upon advanced scientific principles, to burn a specific fuel at highest practicable efficiency. Crane Directed Radiation, likewise, is a new step forward in radiator heating. When you install a Crane Heating System, you get not only superior operation, but you will find your installation quick and easy because of Crane's many quick-assembly features and precisely fitting parts.

Write for complete information on Crane Heating Systems.

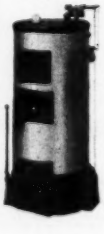
HEATING IS 80% OF AIR CONDITIONING

Eighty per cent of the energy required to condition the air in a home the year around is devoted to heating the air in winter. Be sure of the boiler and the biggest part of the job is done!

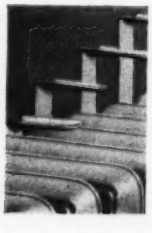
Crane Residential Heating Equipment

Crane Boilers, Radiation, Valves and Fittings fill every need in the modern heating installation. Sectional and round boilers for coal, oil or gas, and for steam, vapor, vacuum or hot water systems. A wide range of styles and sizes.

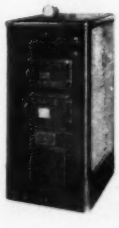
Crane Round Boiler



Directed Radiation



Crane Cool-Fired Boiler



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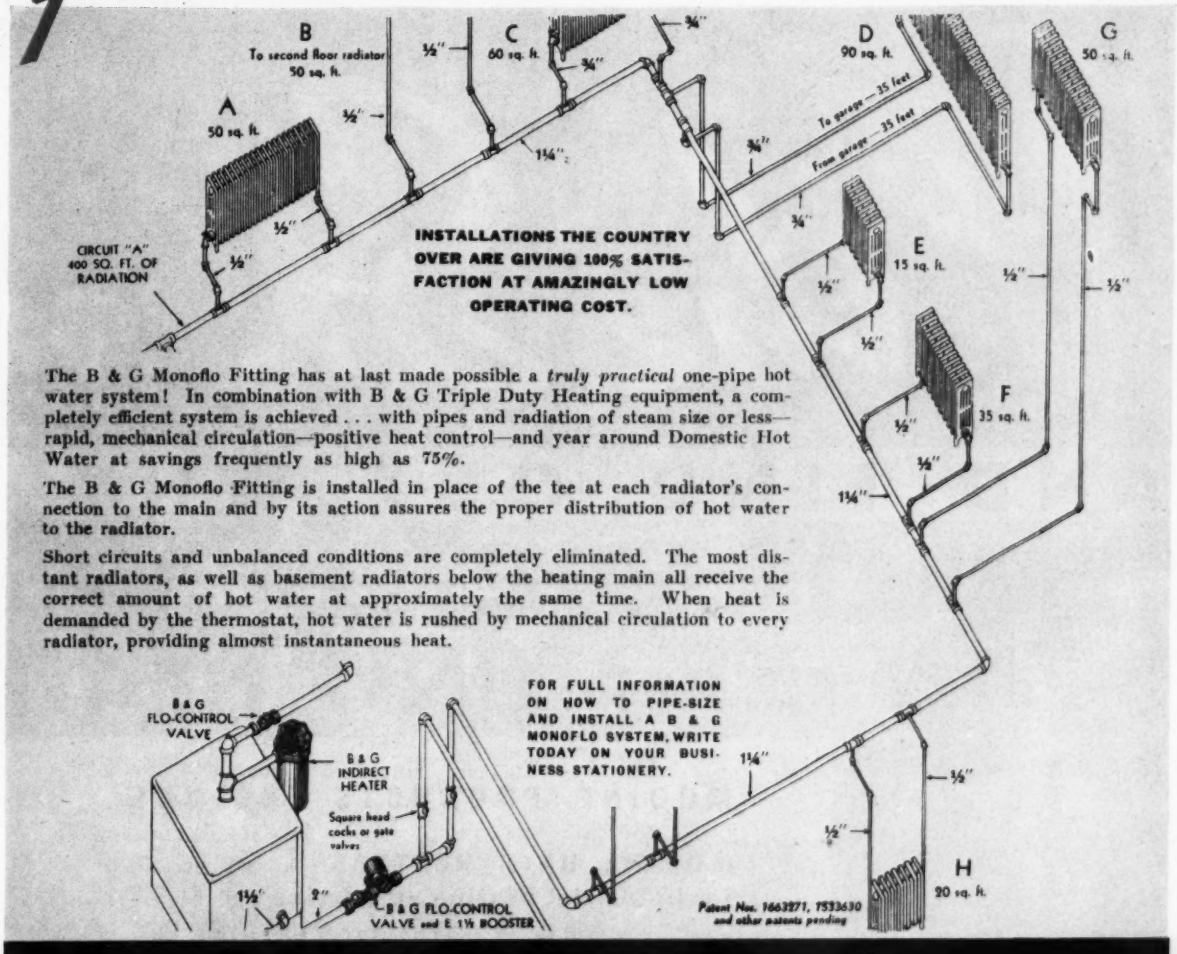
UTTERLY DEPENDABLE . . . AT THE LOWEST COST A MODERN, MECHANICALLY CIRCULATED HOT WATER SYSTEM HAS EVER BEEN AVAILABLE



The B & G Monoflo Fitting has at last made possible a *truly practical* one-pipe hot water system! In combination with B & G Triple Duty Heating equipment, a completely efficient system is achieved . . . with pipes and radiation of steam size or less—rapid, mechanical circulation—positive heat control—and year around Domestic Hot Water at savings frequently as high as 75%.

The B & G Monoflo Fitting is installed in place of the tee at each radiator's connection to the main and by its action assures the proper distribution of hot water to the radiator.

Short circuits and unbalanced conditions are completely eliminated. The most distant radiators, as well as basement radiators below the heating main all receive the correct amount of hot water at approximately the same time. When heat is demanded by the thermostat, hot water is rushed by mechanical circulation to every radiator, providing almost instantaneous heat.

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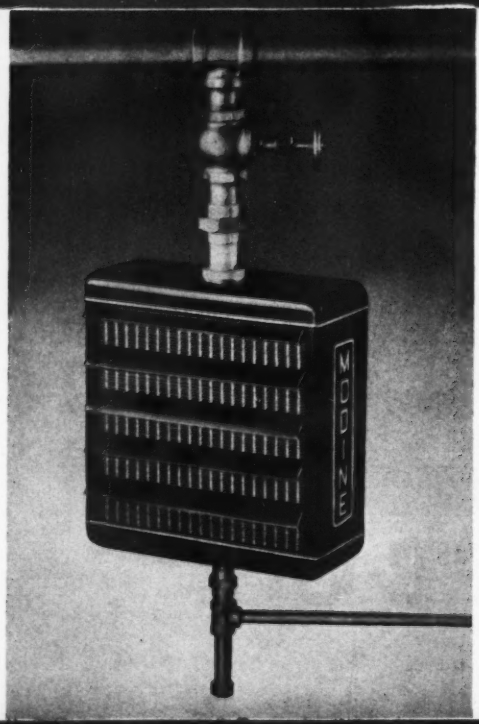

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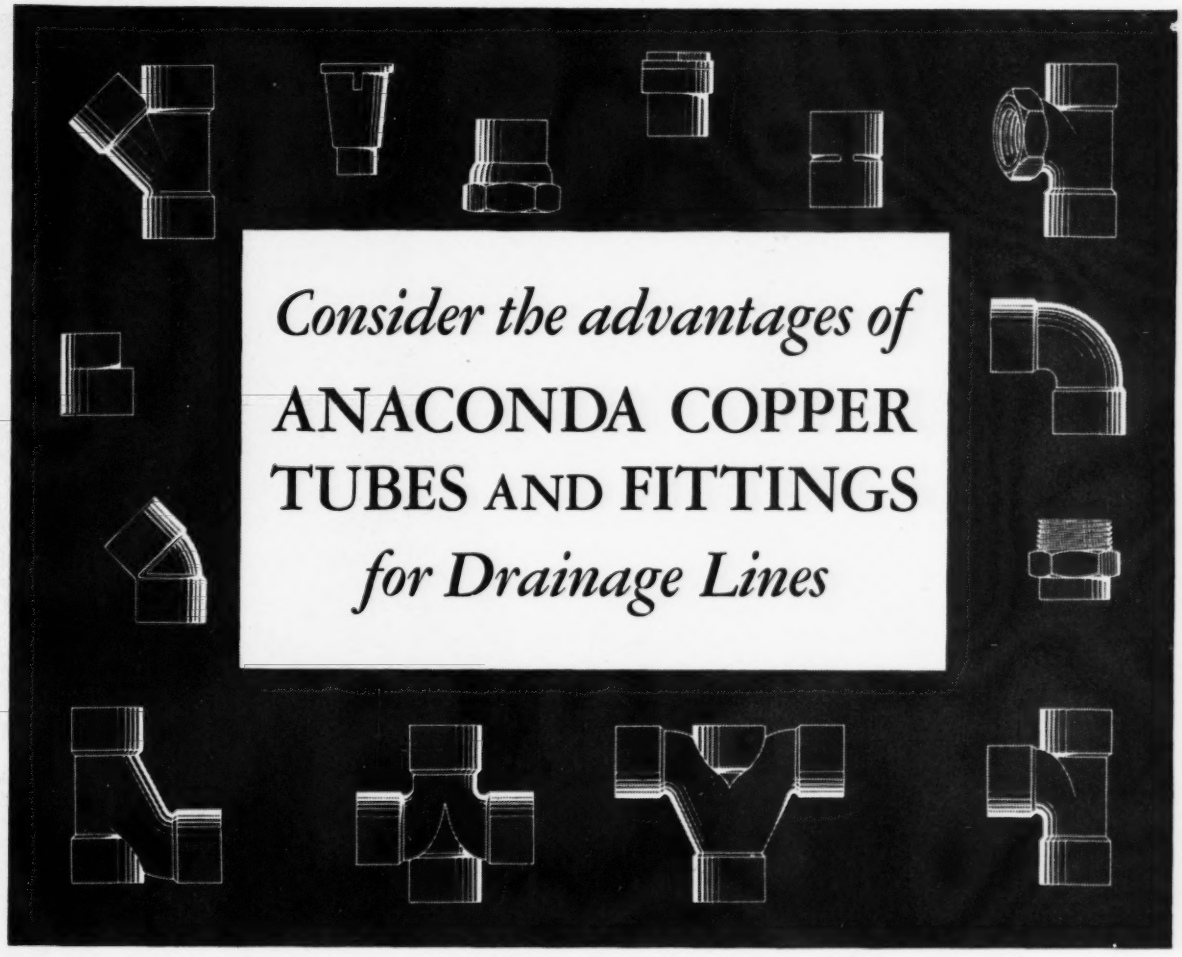

Anaconda Copper Tubes and Fittings are hydraulically tested to insure soundness and are produced to the close tolerances necessary for tight and strong soldered joints. Quality counts!

For soil, waste and vent lines, Anaconda Copper Tubes and Solder Fittings offer these worthwhile advantages:

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4. For the same reason there is a definite saving in space, as no provision is necessary for the swing of a wrench to make a threaded joint.
5. In many cases it is possible to assemble a drainage system for a bathroom on the bench, after which it may be roughed into place and connections made to fixtures.

Your customers will approve these features of Anaconda Copper Tubes and Fittings for drainage lines. Of course, they will appreciate their moderate prices... *competitive with rustable piping.* And the fact that non-rusting copper tubes assure long, trouble-free service will close many a sale.

• • •

NEW! We have just added a 3″ drainage fitting to our line. Anaconda Solder Fittings for use with Anaconda Copper Tubes for drainage piping are available now in these sizes: 1¼″, 1½″, 2″ and 3″.

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Equally matched in everything—

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You can't pick the winner from the picture because you can't tell which sleek hull is manned by the most skilled and experienced sailors.

So, too, in the selection of air conditioning equipment, experience means everything!

American Blower experience dates back over 50 years. It includes not only book knowledge (our engineers have written an authoritative book on the subject) but the actual, practical experience gained in designing and building equipment for every air conditioning and air handling need.

It covers such highly technical subjects as building layout and construction, heating, ventilating, humidification, dehumidification, air washing, cooling, distribution and sound. Not individually but collectively—as a group—toward a single goal—proper air conditioning for a particular problem.

It has resulted in the use of American Blower products in air handling and air conditioning jobs of every type and description all over the world. Much of this equipment has been in constant service for more than 30 years.

American Blower's invaluable experience is available to prospective users of air conditioning only through the regular channels of trade—architects, consulting engineers and contractors.

If your business comes within these classifications, we invite your correspondence for air conditioning data and will be pleased to furnish you with complete information regarding American Blower time-proved products for air conditioning, heating, ventilating, cooling, drying, humidifying, dehumidifying and air handling.

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THE FITZGIBBONS BOILER

TO ALL FRIENDS OF
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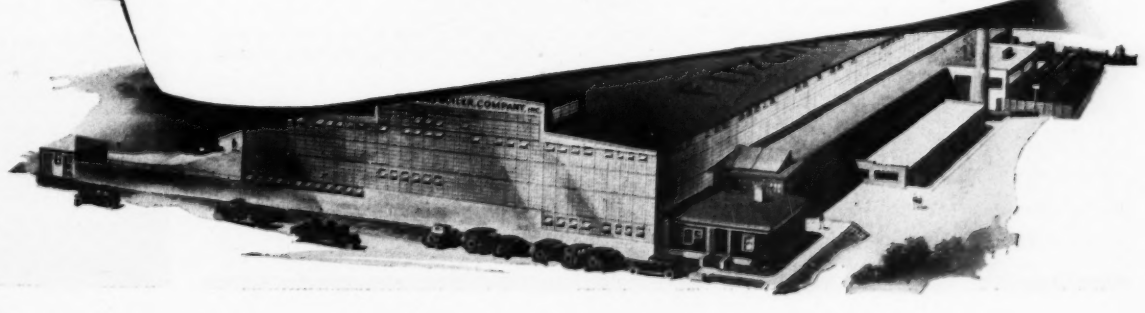
Fifty consecutive years devoted solely to the development and manufacture of a steel boiler carries a distinct obligation. That obligation is, to pledge ourselves whole-heartedly to the close adherence to those principles of boiler-making which have been responsible for our half century of success, and which our many friends in the heating industry have come to expect in our product.

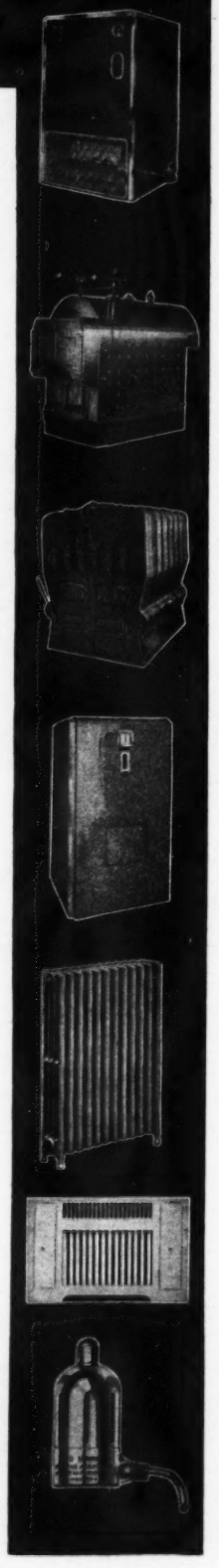
We approach our second half century with confidence. We know what the heating industry demands of our product. We know how to build that product to meet those demands - how to build steel boilers for every heating need, every required capacity, to operate at the utmost economy with any type of fuel, in any heating system.

We pledge ourselves to the study and adoption of every modern production facility calculated to improve the quality of Fitzgibbons Boilers. With this sincere statement of our aims, we present Fitzgibbons Steel Boilers for 1936.

Very truly yours,
FITZGIBBONS BOILER COMPANY, INC.
Hiram Fitzgibbons
President



Some of Burnham's Complete Line



Country-Wide Reduction in Gas Rates Gives You New Sales Opportunities

FOR THE

Burnham - Simplex

GAS BOILER

TAKE for instance, Westchester County, New York. A reduction of 40% in rate resulted in the installation of 130 home heating gas boilers in one month.

With that rate reduction, plus the savings which the Burnham-Simplex has been showing, you get gas-fired heating down to a place where its use is no longer a luxury.

This boiler of ours has certain control and efficiency features, which a little looking into will show you no other has.

Test and Seasonal Efficiency

As a result of these features, the seasonal efficiency in actual service, is approximately the same as the factory-test efficiency. Which you will at once admit, is an extraordinary feat.

Important Draft and Air Control Features—When the burner automatically shuts off, so does both the primary and secondary air supply. Just enough is allowed to come through to keep the pilots lighted. The specially designed cast iron Draft Diverter prevents all pull of air through the boiler, due to chimney action when boiler is not operating. It is these air controls that insure the boiler *holding its heat* for unusually long periods after burner shuts off.

Heat Losses—So effectively is the jacket insulated that the heat losses are less than 5%.

Flue-Way Absorption—The fire-surrounded tube type water ways, are such effectual heat absorbers, that the stack temperature does not exceed 300 degrees. Anything lower than that, as you know, causes chimney troubles.

Here then is a real Burnham Boiler in every way. Send for catalog. Get the facts. See for yourself.

Burnham Boiler Corporation

IRVINGTON, N. Y. ZANESVILLE, OHIO

Representatives in all Principal Cities of the United States and Canada

An Open Letter

to the Plumbing and Heating Industry

On the Subject of **KLEEN-TUBE** *Water Heaters*

MANY things have happened since we old-timers dipped warm, soft water from the old range "resevoy" with a tin dipper!

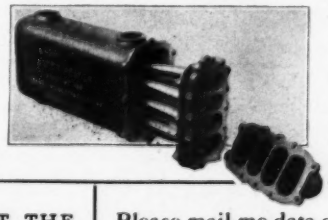
¶ Central heating brought the water-back—that looked like an overgrown flat iron with warts . . . then a whole procession of water heating contraptions—from instantaneous heaters and "oatmeal cookers" to pot-bellied laundry stoves—designed to pinch-hit for the water-back in summer or, if one were wealthy, to furnish some sort of year-round hot water service. . . . Then came the indirect heater! . . . A real advance in water heating that automatic heat controls have extended to year round service.

¶ But, since the range "resevoy," there has been no domestic water heating equipment that has given any apparent consideration to the highly important point of "cleanability." . . . Perhaps each improvement was so important, of itself, that the cleanability factor seemed a minor one. Perhaps it needed the pressure of the demand for complete convenience at low cost that "automatic heat" has brought about. . . . At any rate, it was not until automatic heat provided a new standard of heating convenience that the public began to question the inconvenience and the cost of maintenance of existing water heating equipment.

¶ Our analysis of water heater troubles—and the consequent inconvenience and expense—pointed to "lack of cleanability" as the one all-important cause. . . . Complete cleanability could only be had with complete accessability . . . complete accessability could only be had with straight tubes, open at both ends. . . . That was the start of Adams Kleen-Tube Water Heaters. Everything was designed with cleanability in mind. . . . The cleanable, straight tube heater has proved the need of cleanability by its acceptance by the trade and the user, in both hard and soft water areas.

¶ For the first time since the range "resevoy," water heating equipment is really cleanable. It may be maintained at its highest efficiency for the life of any heating plant. Because of its straight, burnished tubes, precipitated solids (either scale or sludge) do not adhere easily to its surfaces.

¶ Boiler and burner manufacturers may endorse it without reference to the lime content of the water in any locality. . . . Contractors may install it, knowing that their profit will not be eaten up in service costs. Users may buy it with full assurance of ample hot water volume—without any of the water heater troubles that have been accepted as necessary evils. . . . Automatic heat has made cleanable water heaters a prime necessity . . . and automatic heating is endorsing Adams Kleen-Tube Heaters with orders.



Adams Engineering Co., Inc.
2607 Wentworth Ave. Chicago
Dec. 31, 1935

SEE KLEEN-TUBE HEATERS AT THE
4TH INTERNATIONAL HEATING &
VENTILATING EXPOSITION
BOOTH 716

Please mail me data on Kleen-Tube Heaters

Name.....

Address.....

City.....*State*.....

Please check below any automatic heating equipment that you sell.

☐ Oil Burner
☐ GasBurner
☐ Stoker

PENN ELECTRIC SWITCH CO.
DES MOINES, IOWA

IT IS EASY TO "BALANCE" A ONE-PIPE STEAM SYSTEM EQUIPPED WITH

HOFFMAN 6 SPEED VENTING VALVES..

That the simple adjustment of Hoffman Six Speed Venting Valves is a time and trouble-saver is easily recognized and appreciated. "Trial and error" methods in balancing a system are unnecessary—the desired results are obtained the first time, if just ordinary judgment is used in selecting the proper port.

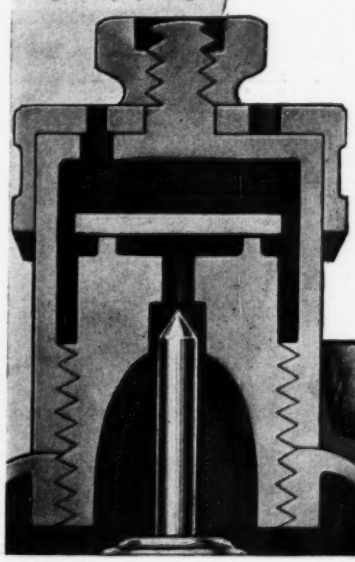
If for any reason it should be necessary to change the adjustment on a valve, the heating contractor need not go back on the job. The home owner can easily make the change himself.

The Hoffman Radiator Valve, both air and vacuum, has six ports—sufficient variation to meet all normal requirements. Each port is a constant and known area, *visibly adjusted.* For whatever speed a radiator is to be vented, the proper port can be selected at a glance—and set in a moment's time.

A one-pipe steam heating system, when equipped with Hoffman Six Speed Vacuum Valves offers advantages which make it the outstanding low-price, full-comfort heating system. The owner's purchase of Hoffman Valves is a self-liquidating investment, the entire cost being quickly paid for out of fuel savings. A profit for him, and a profit for you.

Hoffman Valves and other heating specialties are sold everywhere by leading Wholesalers of Heating and Plumbing equipment.

See our exhibit in spaces Nos. 107-109-111, 4th International Heating and Ventilating Exposition, International Amphitheatre, Chicago, January 27th to 31st



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Makers of Venting Valves, Supply Valves, Traps and Hoffman-Economy Pumps

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"APPROVED" BRONZE VALVES
HEATING SPECIALTIES

For more than a third of a century the name "MILWAUKEE" has been associated with a "Policy of Progress."

Every operation involved in the creation and manufacture of products bearing the well-known "MILWAUKEE" trade mark . . . from the original drawing to the finished product . . . is completed within our own organization.

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See the FASCINATING EDUCATIONAL EXHIBIT

On display at the Milwaukee Valve Co. booth 316, Fourth International Heating & Ventilating Exposition.

The step by step progress in the production of Approved "MILWAUKEE" Bronze Valves will be shown in a display of actual valve parts in the various stages of manufacture and qualified attendants will explain the details and answer questions relating to the general procedure.

MILWAUKEE VALVE COMPANY

MILWAUKEE, WISCONSIN

Manufacturers of "MILWAUKEE" Heating Specialties—Approved "MILWAUKEE" Bronze Valves

ANNOUNCING THE NEW AND SENSATIONAL QUIET MAY "Heat-an-Aire" CONDITIONER

To Architects, Heating and Ventilating Contractors, Building Developers and Prospective Dealers . . .

☆ You and your associates are cordially invited to attend our exhibit at the 4th International Heating and Ventilating Exposition in Chicago--January 27-31 --at which time the new and sensational QUIET MAY Heat-an-Aire Conditioner will be operated under fire, demonstrating a completely engineered unit, under one cabinet, combining

1. Conditioned warm air heating . . . . .
2. Steam radiation heating . . . . . .
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4. Controlled summer air circulation . . .

DESIGNED SO COOLING AND DEHUMIDIFYING EQUIPMENT MAY BE ADDED AT ANY TIME

☆ Dealer distributing organizations in Cleveland, Columbus and Cincinnati, Ohio; Chicago, Springfield and tri-cities Illinois; St. Louis, Missouri; Indianapolis and Fort Wayne, Indiana; St. Paul and Minneapolis, Minnesota; Des Moines, Iowa; Louisville, Kentucky are invited to make application for QUIET MAY Heat-an-Aire Conditioner franchises prior to and during the exposition.

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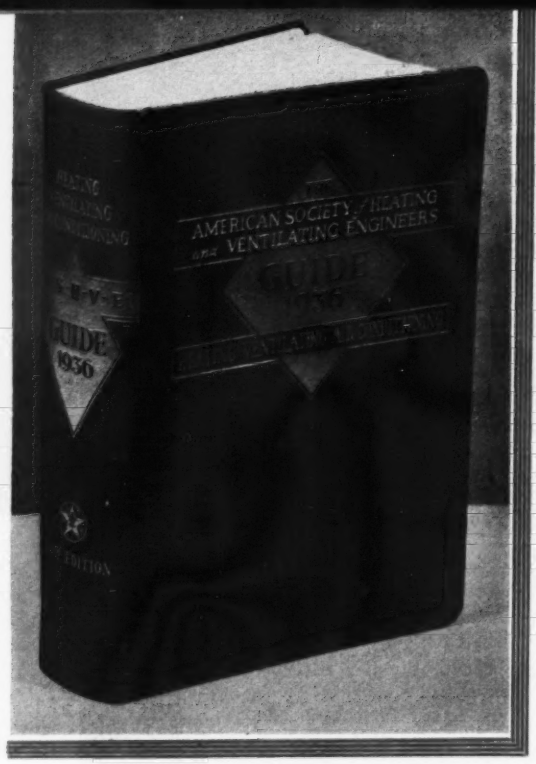

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7.	Heating Load
8.	Cooling Load
9.	Central Air Conditioning Systems
10.	Cooling Methods
11.	Humidification and Dehumidification
12.	Unit Heaters, Ventilators, Coolers, and Air Conditioners
13.	Railway Air Conditioning
14.	Temperature and Humidity Control
15.	Air Pollution
16.	Air Cleaning Devices
17.	Fans
18.	Sound Control
19.	Air Distribution
20.	Air Duct Design
21.	Industrial Exhaust Systems
22.	Fan Systems of Heating
23.	Mechanical Warm Air Furnace Systems
24.	Gravity Warm Air Furnace Systems
25.	Boilers
26.	Chimneys and Draft Calculations
27.	Fuels and Combustion
28.	Automatic Fuel Burning Equipment
29.	Heat and Fuel Utilization
30.	Radiators and Gravity Convectors
31.	Steam Heating Systems
32.	Piping for Steam Heating Systems
33.	Hot Water Heating Systems and Piping
34.	Pipe, Fittings, Welding
35.	Water Supply Piping and Water Heating
36.	Insulation of Piping
37.	District Heating
38.	Radiant Heating
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HOME OF
Master Kraft OIL BURNERS

The entire building shown above, with over 20,000 square feet of floor space, is devoted exclusively to the manufacture of Master Kraft Oil Burners and Furnaces.

Master Kraft Continues Amazing Sales Record

Another Increasingly Successful Year

AGAIN Harvey-Whipple continues its unbroken record of yearly sales increases! Over 68% more Master Kraft Oil Burners and Furnaces were sold in 1935 than in 1934. Even in 1934, when the industry showed relatively few sales increases, Master Kraft sales jumped 34% over the previous year. And the 1935 sales increase is more than double the 1934 record — a truly remarkable tribute to Master Kraft superiority.

Further evidence of Master Kraft popularity is the fact that the number of Master Kraft dealers has grown by over 500% in the past four years — and is still growing!

These are startling figures and are cited here only as tangible evidence of the success of Master Kraft products. There are definite reasons for this success. Every present or prospective oil burner dealer owes it to himself to get complete details on Master Kraft dealer plan. Write us today.

HARVEY-WHIPPLE, Inc.
551 Emery Street • Springfield, Mass.

Master Kraft

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QuickHeat

. . . with the

MINNEAPOLIS HONEYWELL

WATER CIRCULATOR

THE Minneapolis-Honeywell Water Circulator takes the inherent lag out of hot water systems. It steps up the flow from the normal slow gravity circulation to as high as 400 feet per minute, thus providing almost instant heat at the demand of the thermostat. Its capacitor motor produces no radio interference. It is exceptionally quiet and free of vibration due to spring motor mounting and Duprene cushioning. A patented sealed oil reservoir containing no glands, packing or stuffing box completely prevents leakage of oil or water. This is an important and exclusive feature. Available for 1 inch, 1½ inch, 2 inch and 3 inch piping. Only the Minneapolis-Honeywell Circulator provides all these advantages. Complete information will be sent upon request, or the Minneapolis-Honeywell branch in or near your city can supply it. Minneapolis-Honeywell Regulator Co., 2801 Fourth Ave. So., Minneapolis.

■

Branch and distributing offices in all principal cities . . . In Canada: Minneapolis-Honeywell Regulator Co., Ltd., 117 Peter St., Toronto. European sales and service: 233 Heerengracht, Amsterdam, Holland.

MINNEAPOLIS-HONEYWELL

Control Systems

BROWN INSTRUMENTS FOR INDICATING, RECORDING AND CONTROLLING

Package merchandise in plumbing fixtures! Turn the page for the most interesting announcement in the Plumbing Industry today! But first, look at the Beautyware Bathroom pictured above—and think what YOU CAN DO with this kind of merchandise to sell.

BRIGSTEEL

Beautyware

PACKAGE MERCHANDISE FOR BATHROOMS AND KITCHENS

BRIGSTEEL *Beautyware*

A bathtub that weighs only 125 pounds instead of 450 or 500. Two men can lift it *easily*—lift it off the truck, carry it up to the second floor and install it before you would have the heavier tub *off the truck*. A lavatory that comes to you in a carton—easy to handle—easy to unpack—and easy to install. Here, for the first time, is *package merchandise* in plumbing fixtures.

One look at the illustration on the opposite page will show you that light weight, which means easier and quicker handling and installation, is but *one* of the features of these beautiful new plumbing fixtures. Note the charming, colorful design of the bathroom as a whole, and the modern beauty and simplicity of each individual fixture. Shadow Gray and Crater Red—a harmonious color combination that is soft, rich, supremely pleasing—a striking two-tone effect that could not have been bought *at any price* before the introduction of Brigsteel Beautyware Fixtures.

But color, with all of the fascinating shades and harmonies that are available on Beautyware fixtures, is by no means Beautyware's only claim to fame. Beautyware fixtures have engineering and modern design features that are equally as outstanding as the exclusive two-tone or multi-color effects.

The Briggs Process Porcelain Enamel finish is a noteworthy example. This remarkable finish has a higher lustre, more sheen, greater beauty. It is harder and tougher. It is easier to clean. It is acid-resisting. It is, unquestionably, *the finest porcelain finish ever developed.*

From the foregoing, it is easy to understand why Brigsteel Beautyware is generally regarded as the *biggest opportunity* in the Industry today. Already, with only announcements to the trade to promote it, the Factory is receiving RUSH ORDERS from Wholesalers in every section of the country. And Briggs is FILLING THESE ORDERS—filling them on a *first come—first served* basis.

To Master Plumbers we suggest that you contact your wholesaler. Possibly he has now received his stock of Beautyware. You will want to see it and GET YOUR ORDER IN so you can start immediately to build up your volume and profit with Beautyware.

PLUMBING WARE DIVISION
BRIGGS MANUFACTURING CO.

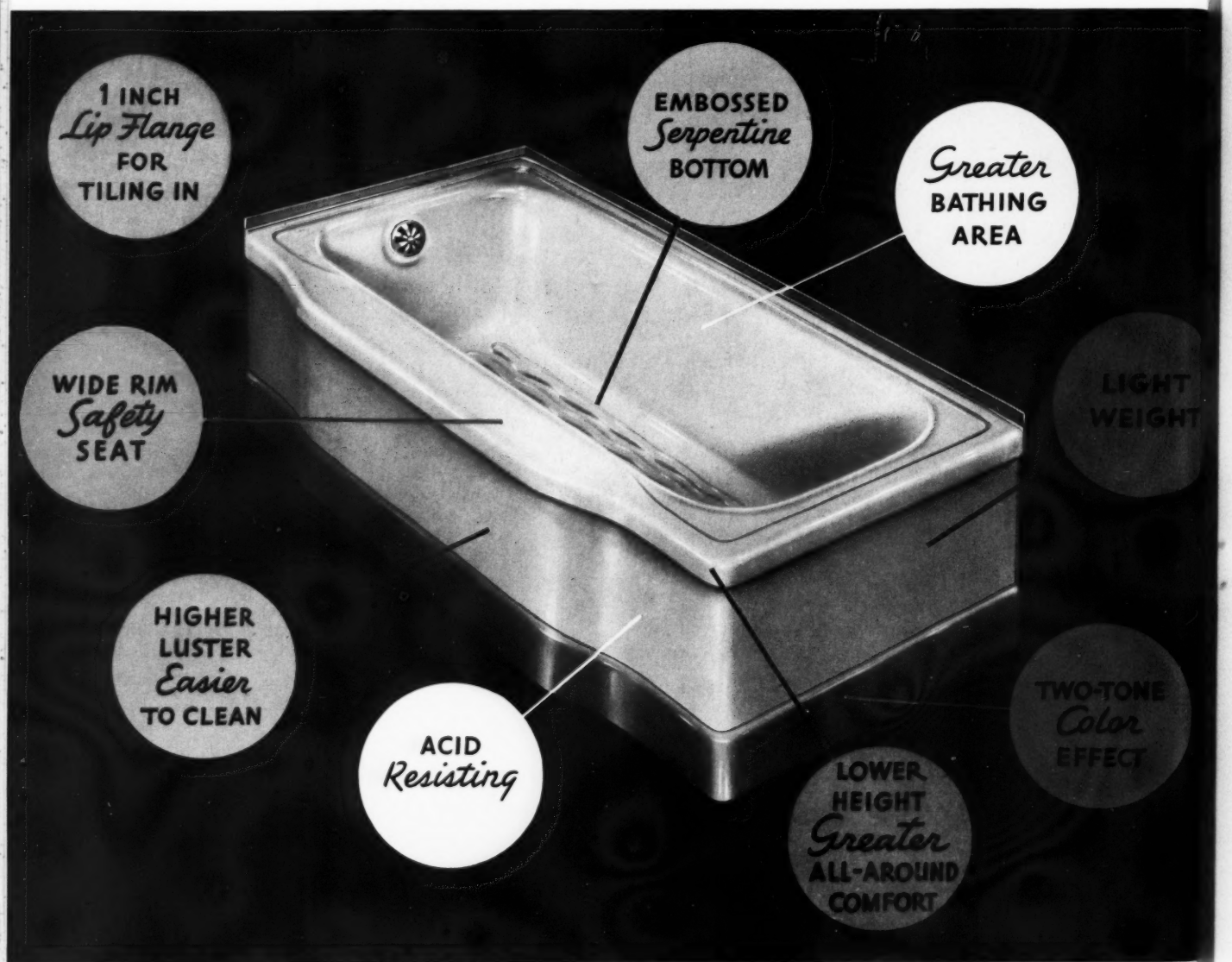
DETROIT
MICHIGAN

Show this charming Beautyware Bathroom to the woman who is remodeling or to the man and woman who are building a new home, and YOU HAVE MADE A SALE. Show it to the Builder and tell him this is but one of many Beautyware Bathroom suggestions you can give him, and you will make MORE SALES. Never have you had SO MUCH to sell—*package merchandise* that is easier to sell—easier to handle—easier TO INSTALL.

BRIGSTEEL

Beautyware

THE BATHTUB THAT HAS THE WHOLE PLUMBING TRADE TALKING!



The Beautyware Bathtub has caused a wave of commendation and endorsement that has swept the Plumbing Trade from coast to coast. It's the Hit of the Year—and deservedly so, because no other tub has so many, or such outstanding features.

It has a wide rim seat, a utility and safety feature. The Brigsteel 5-foot tub has more bathing area than larger tubs of other makes. Dangerous slopes have been eliminated, giving greater length and width inside the tub for comfort and safety. It has the Embossed Serpentine Bottom—the wavy safety tread, which greatly reduces the possibility of slipping—or may be had with regular bottom. It is acid-resisting. It has a full one-inch "lip flange" which permits easy and perfect tiling-in or plastering, thus preventing water seepage and cold drafts. It weighs only *one-third* as much as other wares. Because of its light weight, the Beautyware tub will not pull away from the wall. It can be had in two or more colors, an exclusive feature. And finally, it has the grace and beauty of modern design. See the Beautyware Bathtub and other fixtures at your wholesaler's—and get *your order* in early.

BB

PLUMBING WARE DIVISION, BRIGGS MANUFACTURING CO., DETROIT, MICH.

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PREST-O-LITE TORCHES...

speedy, modern tools

● Prest-O-Lite Torches are replacing old-fashioned equipment in many lines of work requiring soldering, heating, or brazing operations. These up-to-date, efficient torches enable operators to accomplish neat, permanent jobs in a fraction of the time required by any other method. No preheating is necessary. Just light the torch and start the job—a distinct advantage when working against time!

Prest-O-Lite Torches are equipped with gooseneck type stems. This modern feature, together with the small but intense flame which can be concentrated on a tiny spot, enables Prest-O-Lite Torches to be used easily in places that are difficult to reach with other equipment. Each stem contains an individual mixer which insures the proper flame at all times through the automatic, correct proportioning of acetylene and air.

Ask your jobber to demonstrate Prest-O-Lite Torches to you today, or write to the company at 30 East 42nd Street, New York, N. Y. for complete details.

THE LINDE AIR PRODUCTS COMPANY

Unit of Union Carbide and Carbon Corporation

In Canada: Dominion Oxygen Co., Ltd., Toronto

Prest-O-Lite GAS

Prest-O-Lite gas in easily portable cylinders is available everywhere. Exchange stations throughout the country can supply you quickly with a full tank.

A wealth of ideas for soldering, heating, and brazing are in this book, "101 Uses for the Prest-O-Lite Air-Acetylene Flame." Send for your copy today.

PREST-O-LITE TORCHES

O-6114—Torch Outfit includes the largest of the Prest-O-Lite open flame torches and six feet of hose with union . $3.50

O-6132—Prest-O-Lite No. 2 Plumber's Outfit includes the same torch as above, an extra stem and mixer assembly, and 15 feet of hose with unions . $5.00

O-6131—Prest-O-Lite No. 1 Plumber's Outfit includes a large torch the same as above except that it has a needle valve, a 10 lb. Pressure Regulator and 15 ft. of hose $8.50

Name the job...

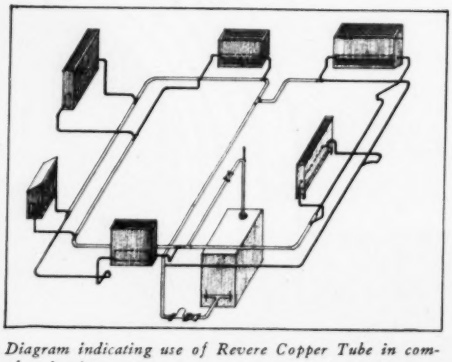

Diagram indicating use of Revere Copper Tube in complete heating system.

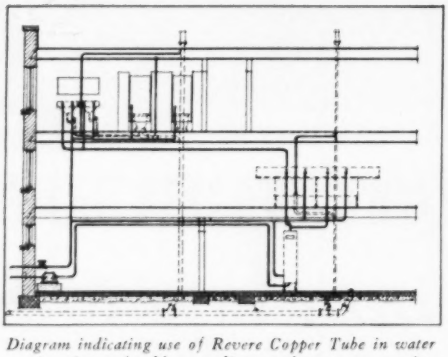

Diagram indicating use of Revere Copper Tube in water service; hot and cold water lines, and vent; gas service.

Revere Copper Tube can do it!

It didn't take plumbing contractors long to learn that the copper tube provided many advantages for service lines from main to meter, and for hot and cold water lines.

What was more logical than to apply the virtues of copper tube to complete heating installations! Revere Copper Tube and Streamline soldered Fittings greatly simplify this job, and are *profitable* to home owner and contractor.

Today we find plumbing contractors everywhere using Revere Copper Tube for every piping job. (The diagrams portray some of the major applications.) Here are just a few of the advantages to keep in mind:

(1) Three types (K, L, M) to meet various installation conditions; (2) Hard Temper for straight runs; (3) Soft Temper where flexibility is desired, and long runs essential; (4) Smooth flow of water, steam, oil, gas; (5) Freedom from rust and scale; (6) Finished installation is neat and workmanlike in appearance; (7) Lifetime service; (8) And best of all, Revere Copper Tube allows the contractor to make a fair profit while giving his customers all these advantages at economical cost.

Whatever the piping job . . . Revere Copper Tube can do it. And, remember, you will enhance your reputation for good work by using this product. Revere will help you to learn more about the possibilities for profit through copper tube. An experienced Revere representative is at your service for consultation.

Revere Copper *and* Brass

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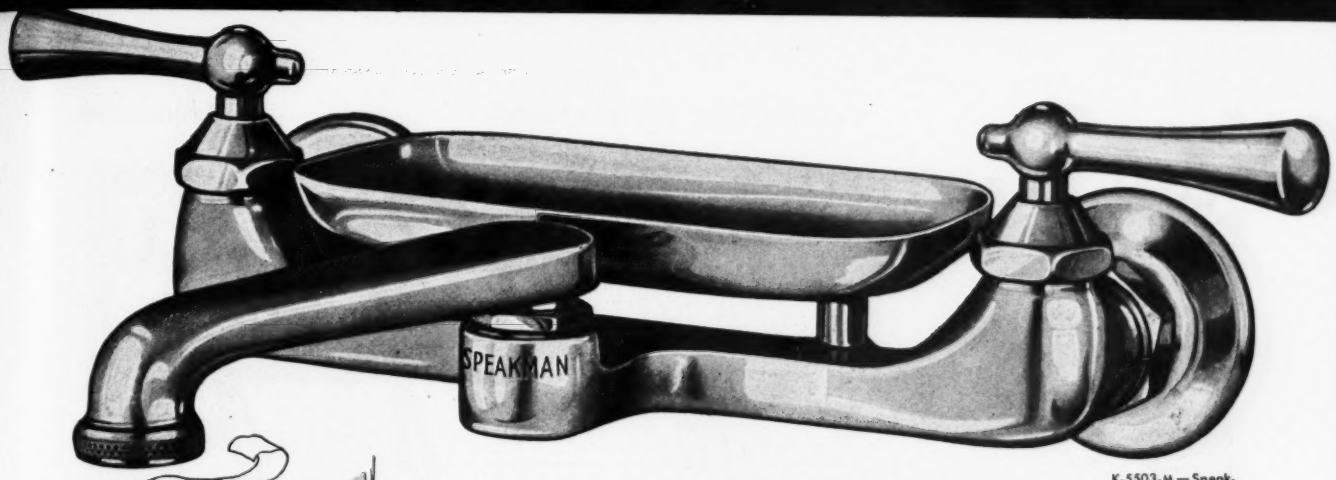


K-5503-M—Speakman "Graceline" Sink Fixture. (Design Patented)

Selling quality fixtures is profitable

. . . and all SPEAKMAN FIXTURES are QUALITY!

THE Speakman Graceline Sink Fixture is a good example of quality construction. Its modern design and graceful lines make this one of the most attractive Sink Fixtures on the market—and one of the easiest to sell. —Furthermore, when you sell a Speakman Graceline Sink Fixture you make a worth-while profit.

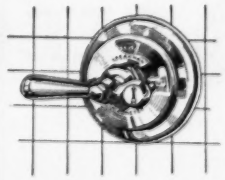
What is true of the Graceline Sink Fixture is true of the entire Speakman line—it has always been known for quality. So why not recommend Speakman Showers and Fixtures to your customers and make a profit on what you sell?

SPEAKMAN COMPANY
Wilmington • Delaware

SPEAKMAN *Showers & Fixtures*

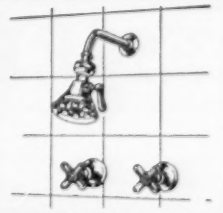
—Speakman Any Self Cleaning Shower Patented January 2, and November 3, 1931.)

K-5503-M—Grace-Line Sink Fixture (Design Patented)



K-3363—Speakman Built-in Mixomatic

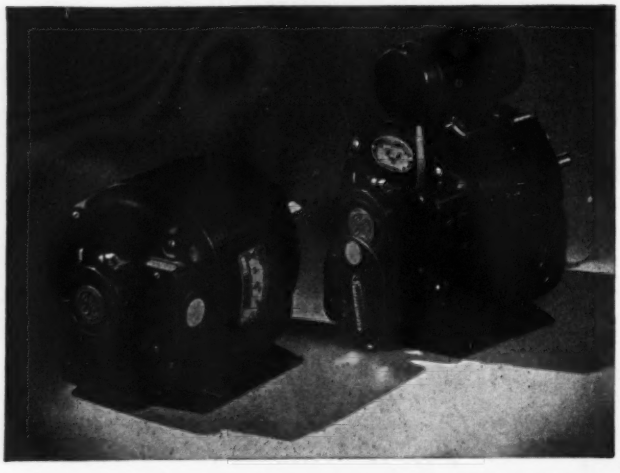
K-5010—Speakman Unit-Acto Lavatory Fixture



K-2634-M—Built-in Metaline Heavyweight Shower with Anystream Head

K-4585-M
Dupont Tub Filler with Acti-Easy Waste

TO MAKE SELLING EASIER



Equip WITH G-E MOTORS

WHEN you present your next installation proposition, tell the prospect that you would like to use G-E electric equipment — motors, control, cable, etc. You won't have to sell him on their desirability. He's already convinced that G-E products are *high-quality* products. *The reputation of G-E equipment will help you sell.*

For example, General Electric offers you . . .

CAREFREE-MOTORS . . . EASY TO INSTALL . . . SIMPLE TO MAINTAIN . . . DEPENDABLE

Type KH resistance, split-phase motors for belt-driven fans and blowers requiring up to ¼ hp.; Type KC motors for the same class of service where the horsepower required is from ⅓ to 10 hp. Within the fractional-horsepower range, both types have the following advantages:

LARGE OIL SUPPLY — Minimizes lubrication attention—once-a-season oiling is all that's needed.

BELT TIGHTENER (optional)—This new, radically different belt tightener depends on torque, and not on springs, for its action. It eliminates service calls for belt tightening or premature belt replacement —saves you money on that feature alone.

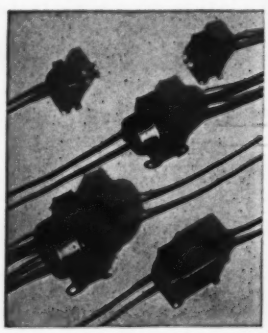
CUSHIONED POWER—Helps your installation set an agreeably new standard of quietness. Durable, springy rubber mounting, securely clamped in place, isolates vibration—eliminates unnecessary noise.

You can get G-E motors—small and large—in every type and size for every air-conditioning need. Our motor specialists—in a G-E office conveniently near you—will gladly help you choose. General Electric, Dept. 6—201, Schenectady, New York.

070-102

OTHER AIDS TO SALES

G-E CONTROL TRANSFORMERS

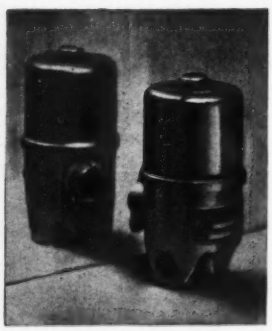


Choose G-E control transformers for safety, convenience, and simplicity of wiring wherever small solenoids, relays, motors, lamps, and similar accessories needed for an air-conditioning installation must be operated at various voltages—stepped down from the lighting circuit.

General Electric's complete line of small control transformers makes operation at reduced voltages as simple as a, b, c.

There are standard G-E control transformers for many applications; your requirements for special voltages can be economically and quickly met from an extensive line of standard parts. Why not ask us for information on these control transformers?

G-E SOLENOID VALVE



Ideally suited to air-conditioning needs, this new electric valve will handle water or low-pressure steam quickly, easily, and economically, by remote control.

It provides positive operation over a wide range of pressures and temperatures. It is economical—uses only 7½ watts at 110 volts, 60 cycles. Its parts are sealed in steel — no stuffing box. A handy, built-in terminal box saves installation expense. A convenient metering pin provides 50-per-cent flow regulation—no extra valve is needed.

Wherever you have a big job for a little valve, this device will save you money. Would you like further information?

GENERAL ELECTRIC

THE *EXTRA* PERFORMANCE YEARS MAKE A HIT WITH MYERS USERS

"Plus Values in Extra Service Years"—price is important but profits depend on quality and performance both of which are convincingly important right now when you are considering a line of water systems for 1936.

Now is the time to give Myers Water Systems an opportunity to stimulate your water system sales and profits during the months to come. Competition, certainly. You will have it on many fronts but you can face it successfully without fear or favor with Myers powerful selling advantages that mean so much to you and even more to your customers who continue to depend on you to supply them with the best the market affords at prices they can now well afford to pay.

Be a leader. Sell Myers precision built Water Systems—the world's finest and most complete line with extra service years built into every style and size—and profit accordingly.

Write or wire for catalog and full particulars.

F. E. MYERS & BRO. CO. ASHLAND, OHIO

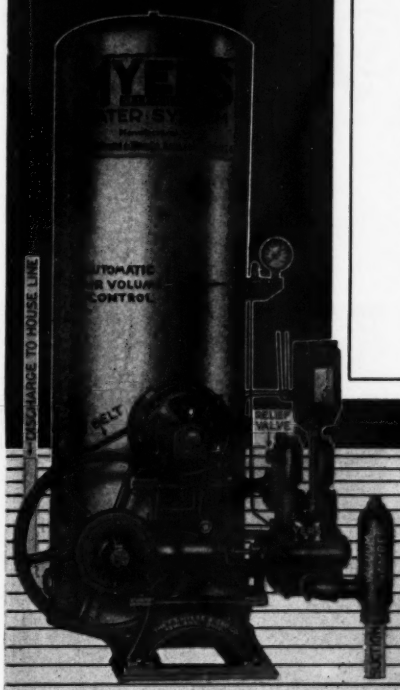


FIG. 2510

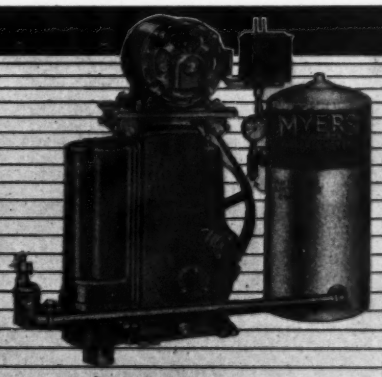


FIG. 2741

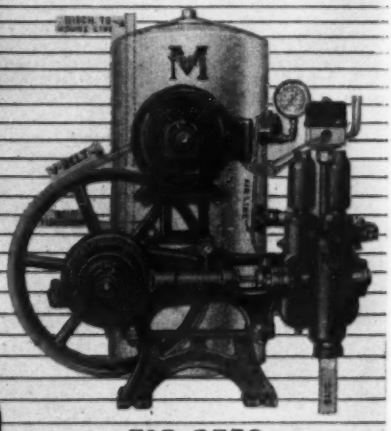


FIG. 2739

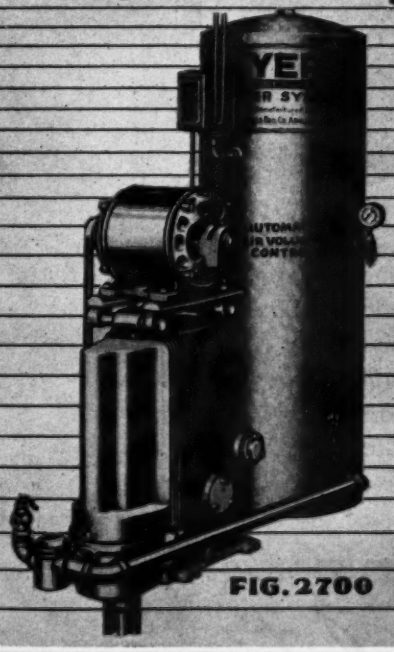


FIG. 2700

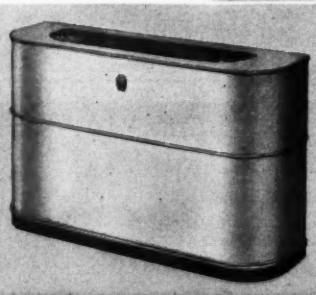
FIG. 2631

PUMPS—WATER SYSTEMS—HAY TOOLS—DOOR HANGERS

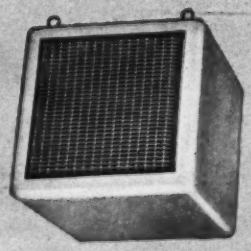
FAIRBANKS MORSE PRESENTS

WEATHER TO ORDER - - - FOR 1936

WEATHER TO YOUR ORDER



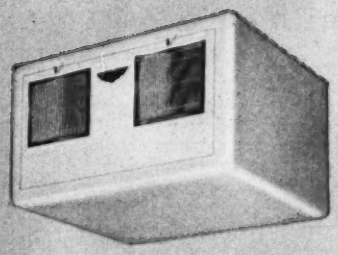
UNITS RANGE FROM 1 TO 10 TONS
HANDSOME FLOOR CABINETS
ATTRACTIVE WALL AND CEILING UNITS
SMALL CENTRAL STATION SYSTEMS UP TO 25 TONS
F-M PRECISION MANUFACTURE



A STATEMENT OF POLICY

Fairbanks-Morse Air Conditioning Equipment is and will be sold only through distributors and dealers. Under no condition will it be sold direct to consumers.

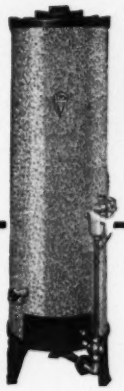
FAIRBANKS, MORSE & CO.



How much *more* the new Fairbanks-Morse Air Conditioning line gives you for 1936—a new line of Ortho-Clime equipment . . . new sizes . . . new and handsome styling . . . new central station equipment for homes, office buildings, banks, stores and chapels . . . new low prices. Man, what an opportunity for bigger sales than ever before during 1936! Don't wait! Get full information on the F-M Air Conditioning Franchise NOW! Address Fairbanks, Morse & Co., Air Conditioning Division, Dept. 1711, 900 S. Wabash Ave., Chicago, Illinois.

FAIRBANKS-MORSE *Air Conditioning*

106 YEARS OF PRECISION MANUFACTURING



AGP REGULAR automatic gas-fired, storage WATER HEATER

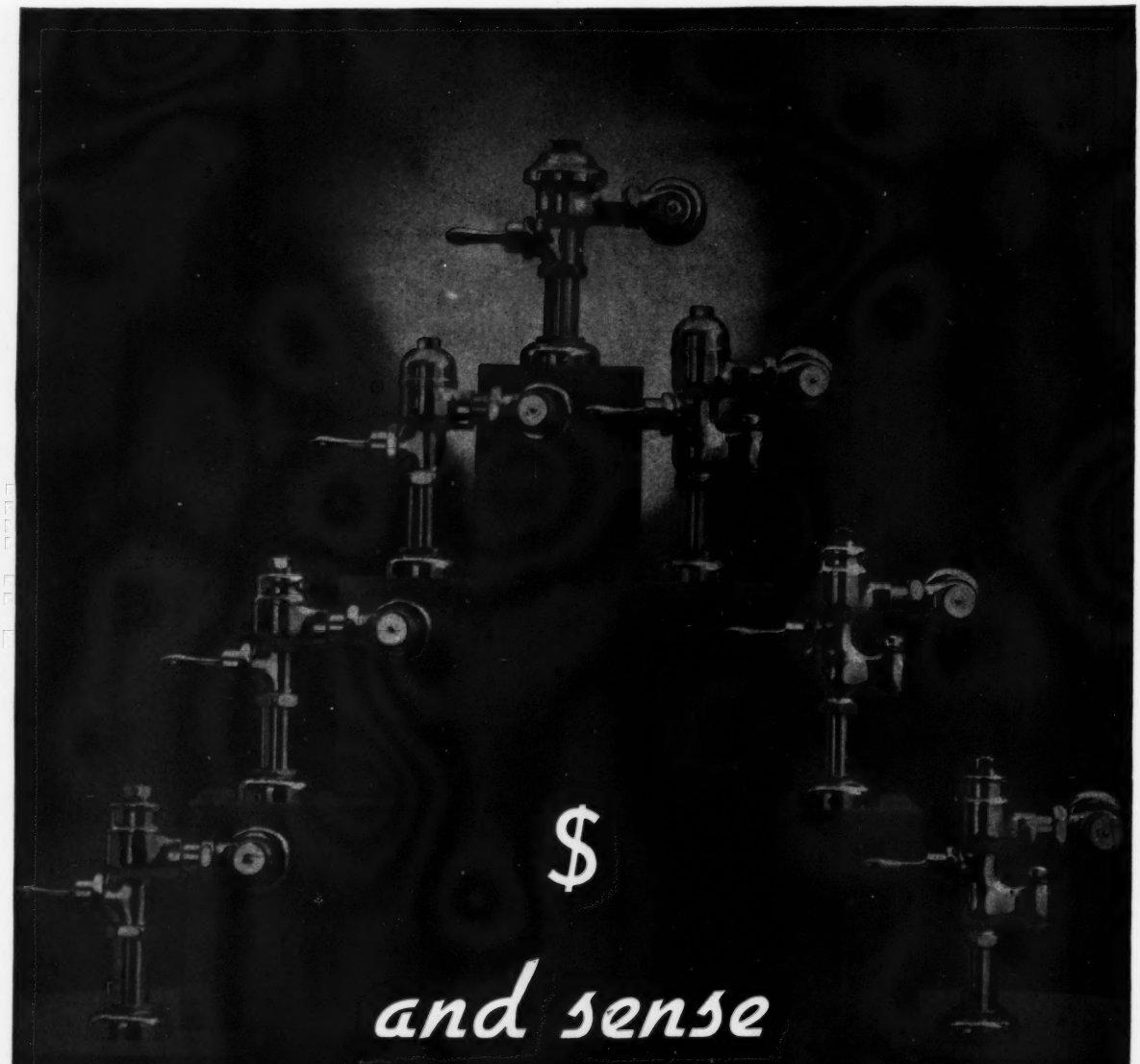
● Completely automatic Hot Water for every home and purse: each heater has baked enamel steel jacket, tank of galvanized heavy gage steel or strengthened copper. AGP Regular (multiple flue type) comes in 20, 25, 30, 40 and 75 gal. sizes. The Dictator (single flue type) comes in 15, 20, 30 and 40 gal. sizes.

When you sell an AGP water heater you've made a friend. These heaters will work day and night

THE DICTATOR automatic gas-fired, storage WATER HEATER

efficiently and economically to build YOU up as the man whose word is good and whose work is as dependable.

AMERICAN GAS PRODUCTS CORPORATION
DIVISION OF AMERICAN RADIATOR COMPANY
40 WEST 40TH STREET, NEW YORK, N.Y.



$

and sense

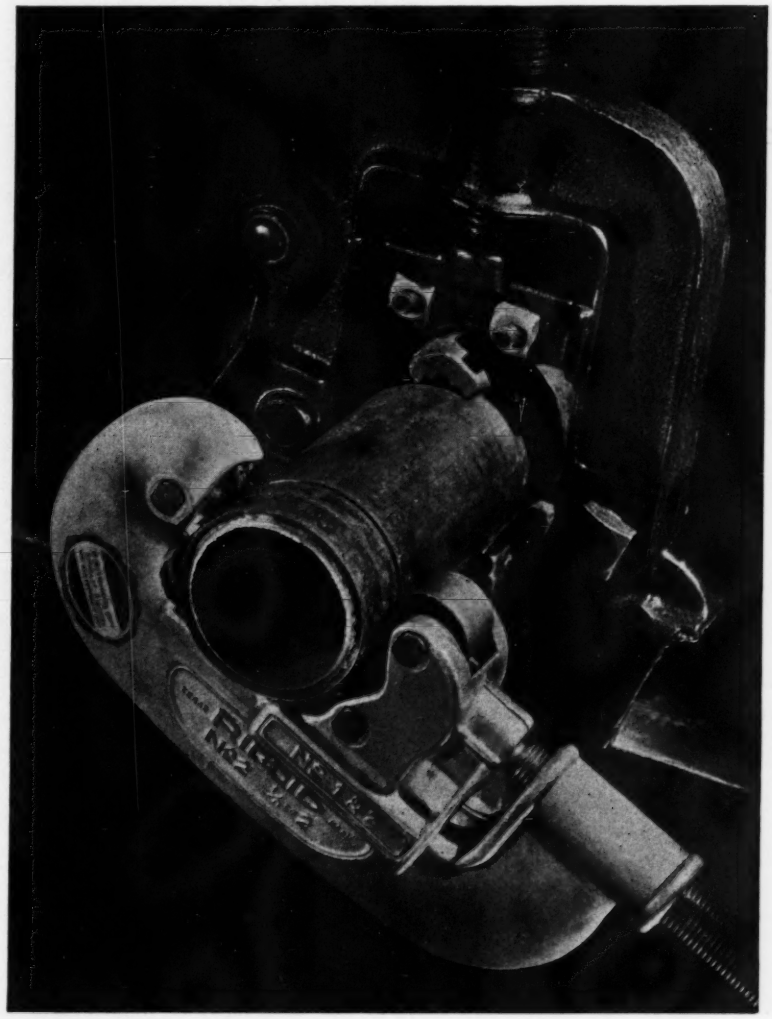
More Sloan Flush Valves are sold than all other makes combined. Prices are the same. Why accept a substitute when you are paying for Sloan quality?

Get the *plus* values you are entitled to—world-wide service and supplies, low maintenance cost, durability, the experience of thirty years manufacturing flush valves exclusively, in short—the name SLOAN on the product, a mark of quality known the world over.

Get your money's worth: insist on SLOAN.

SLOAN VALVE CO., CHICAGO

RIGHT THROUGH ANY PIPE!



A RIDGID Pipe Cutter rolling right through any pipe. A No. 1 and 2, capacity 1/8" to 2".
And that's a RIDGID Vise holding the pipe—with no-mar jaws.

In a perfect circle, its alignment true, its powerful steel-reinforced housing holding it true, this RIDGID Cutter rolls through any pipe in a few easy turns — and leaves practically no burr.

But the secret of its unusual performance lies in its distinctive wheel blade. Coined out of sheet tool steel, hammered to shape, heat-treated and then fitted with a cast-in reinforced hub, this thin blue blade provides the cutting stamina that means far more cuts per blade—with economy and extra use-satisfaction to the user.

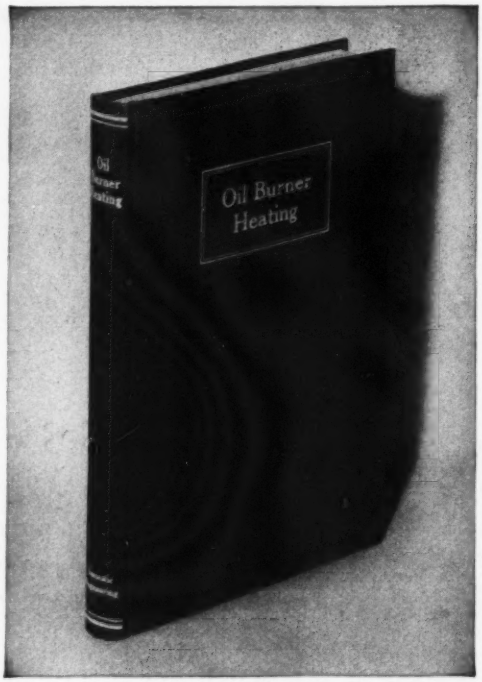
Try a RIDGID Cutter and you'll quickly see the difference. Your Jobber has them.

This is the thin super-steel wheel blade that does several times as much work as old-style cutter wheels.

The Ridge Tool Co., Elyria, Ohio, U. S. A.

RIDGID

Pipe Wrenches {Regular, End and Compound Leverage}, **Cutters, Threaders, Vises**



OIL BURNER HEATING

★

A book which contains information you should know about oil burner heating

Can You Answer These Questions?

What will the use of oil fuel cost in comparison with coal and gas?
Which oil is best to use?
What percent CO_2 can be reached in oil burning?
How do you figure oil consumption for year?
What is involved in question of oil burner efficiency?
What equipment do you use to test oil burner?
What is a direct heating surface in a boiler?
What is indirect heating surface in a boiler?
At what rate of output of boiler do you find maximum efficiency?
How do you find heat losses?
How are combustion chambers built?
How to change condition in underheated room?
How do you test all year operation of a heating plant in moderate weather?
How do you know if air supply is correct?

★

Table of Contents

How to Figure Cost of Heating with Either Oil, Gas or Coal.
Analysis of Oil Fuel for Oil Burners.
How to Know If Air Supply Is Correct.
Rapid Method of Figuring Oil Consumption.
What Makes for Efficiency in Installations.
The Relation of an Oil Burner to a Coal Designed Boiler.
Practical Methods of Testing Burner Efficiency.
A Testing Problem Worked Out.
How Combustion Chambers Are Made.
Oil Burners Under Gas Boilers.
Underheated Rooms.
Testing the Heating Plant in Moderate Weather.
A Practical Example of Testing a Heating Installation.
Piping for Headroom.
How to Separate Steam and Water.
Bleeder Connections When the Headroom Is Low.
A Trouble Job Is Solved.
How to Clean a Boiler.
What Is the Hartford Loop?
How to Calculate Seasonal Heating Costs.
How to Figure Radiation Without Tables.

OIL BURNER HEATING discusses ways and means of overcoming difficulties from the sale of the job to the operating installation. Testing problems worked out show what should be done to test efficiency of installations, how to compare cost of oil or gas heating with coal, how to find heat losses, how combustion chambers are built, what to do when changing from gas installation to oil burner, how to figure oil consumption for year (a chart illustrates method), a practical example for testing heating installations, how to make bleeder connections when the headroom is low. All of these and many other problems are explained and illustrated with diagrams and charts, so that you can use this book on practically any oil burner installation.

For instance, in the first chapter of the book "HOW TO FIGURE COST OF HEATING WITH EITHER OIL, GAS OR COAL" is a comprehensive detailed description of fuel cost comparison which is the actual experience of a dealer who was called upon by a prospective oil burner buyer to explain the difference in cost, operating with each of these fuels. This chapter alone, with its valuable table on fuel costs will prove worth many times the cost of the entire book. The Table of Contents gives you an idea of how thoroughly this book goes into its subject—how it takes oil burner heating with its many problems and difficulties and breaks it down into simple, understandable information which will be of assistance to everyone interested in oil burner heating.

It will be to your advantage to get a copy of OIL BURNER HEATING —go through its pages and find for yourself why we say it is the most important book yet published on the subject it covers. Hundreds of men everywhere are using this book because in its pages is information which other men have spent years to learn—actual working examples, no theory, just plain facts.

This new 184-page book has been reasonably priced at ONE DOLLAR. Send your order today. If it is not all we claim, your money will be cheerfully refunded. Fill in the coupon, pin your check for $1.00 to it and mail today.

DOMESTIC ENGINEERING COMPANY, D.E.-1-36
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Chicago, Illinois.

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★ ***Mail Coupon Today for Your Copy of Oil Burner Heating***

"Emergency" jobs pay profits

WHEN YOU SELL THESE
ARCO CONVERSION BOILERS

A model for every home and purse

THE SELLING SENSATIONS FOR HEATING CONTRACTORS RIGHT NOW

DURING these months of coldest weather, heating plant failures cause most of your calls for sudden service. When you get a complaint of oil heating-boiler breakdown, remember it's a chance for extra profits. Instead of costly repairs, recommend an Arco Oil Furnace —and point out that it's cheaper in the long run.

Every Feature Home Owners Want

There's a model of No. 11 or No. 12 Arco Oil Furnace to fit every type of home down to the smallest, and every budget. Both of them are designed by heating experts for burning oil efficiently and economically. They deliver full comfort value for every dollar's worth of fuel. Each is backed by the best known name in heating—and that means a lot to your customer, too.

Prompt Delivery, Day or Night

29 Warehouses and hundreds of distributors have stocks on hand now. They're ready to supply you on a moment's notice. For the complete details, ask your jobber. Or, write or wire today to Heating Headquarters—American Radiator.

Domestic Hot Water all year round

—A feature of the Arco Oil Furnace. This shows the Taco "Biltin" Heater in the No. 11—one of your strongest selling points.

No Burner Visible — It's inside

Extended jacket provides room inside for burner and all accessories, making a better looking, cleaner installation.

BETTER HOUSING PROGRAM

AMERICAN RADIATOR COMPANY

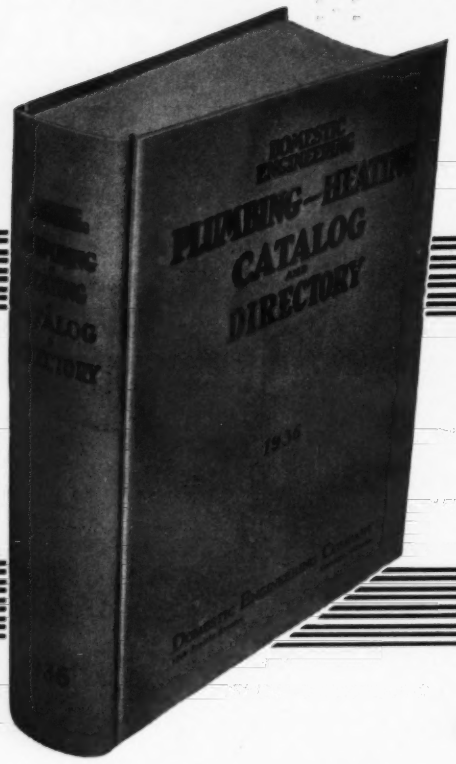
40 West 40th Street, New York, N. Y.

Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

Arco Oil Furnace

No. 11 and No. 12

PRODUCT OF THE WORLD'S LARGEST MANUFACTURER OF HEATING EQUIPMENT



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1004 Pages
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★

1936 EDITION

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A LINE OF WINNERS

for dealers who are interested in winning bigger profits in 1936

McDonald Water Supply Systems are engineered to appeal to those dealers who know the possibilities of dependable water supply systems, and are determined in 1936 to cash in on them.

No SHALLOW WELL system ever created more of a sensation than the McDonald Figure 420 shown below. A success from the moment it was introduced, it sells on sight—and stays sold.

No DEEP WELL system has so many definite sales advantages as the McDonald Figure 416 illustrated at the right. Direct lift—balanced load—positive oil lubrication—ready accessibility—more service for less money.

The McDonald line—made by a company that has been manufacturing pumps since 1856—includes power pumps and water supply systems for domestic, commercial and industrial use. Dealers seriously interested in increasing their pump profits in 1936 are invited to ask for details.

McDONALD DEEP WELL PUMP

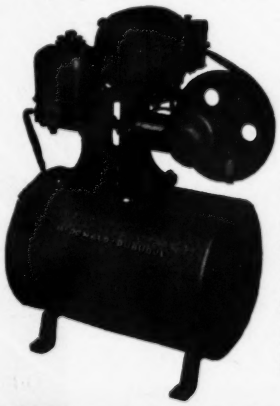
Fig. 416

(Illustration Shows Pump with Cover Removed)

26 Points of Superiority

1. Positive Oiling Device
2. Oversize Wrist Pins
3. Heavy-duty Pump Motor
4. Grooved Motor Pulley
5. Modified V-Belt
6. Adjustable Motor Bracket
7. Wide, Smooth-faced Pump Pulley
8. Sturdy Crank Pins and Sleeves
9. Extra Deep and Large Stuffing Box
10. Handy Oil Level Plug
11. Accessible Discharge Head Cap
12. Heavy Accessible Studs
13. Exclusive Discharge Head
14. Large Discharge Tapping
15. Heavy Wide Spread Base
16. Manual Air Control Valve
17. Handy Drain Plug
18. Positive Air Pump
19. Heavy Housing and Large Oil Reservoir
20. Monel Metal Piston Rod
21. Rigid Connecting Rods
22. Double Machine Cut Gears
23. Handy Adjustable Air Pump Arm
24. Load Balancing Springs
25. Heavy-duty Cross Head
26. Substantial Polished Steel Guide Rods

Fig. 420-10 SHALLOW WELL PUMP



$48.00

Complete with 10-Gallon Tank

Here's the ready seller that has created such a sensation in pump circles. Operates NOISELESSLY. Draws 250 gallons per hour. Equipped with standard quality motor, automatic safety switch and exclusive spring tension stuffing box. Features positive oil lubrication. Sturdy McDonald construction throughout, yet it retails for only $48.00. Write for details.

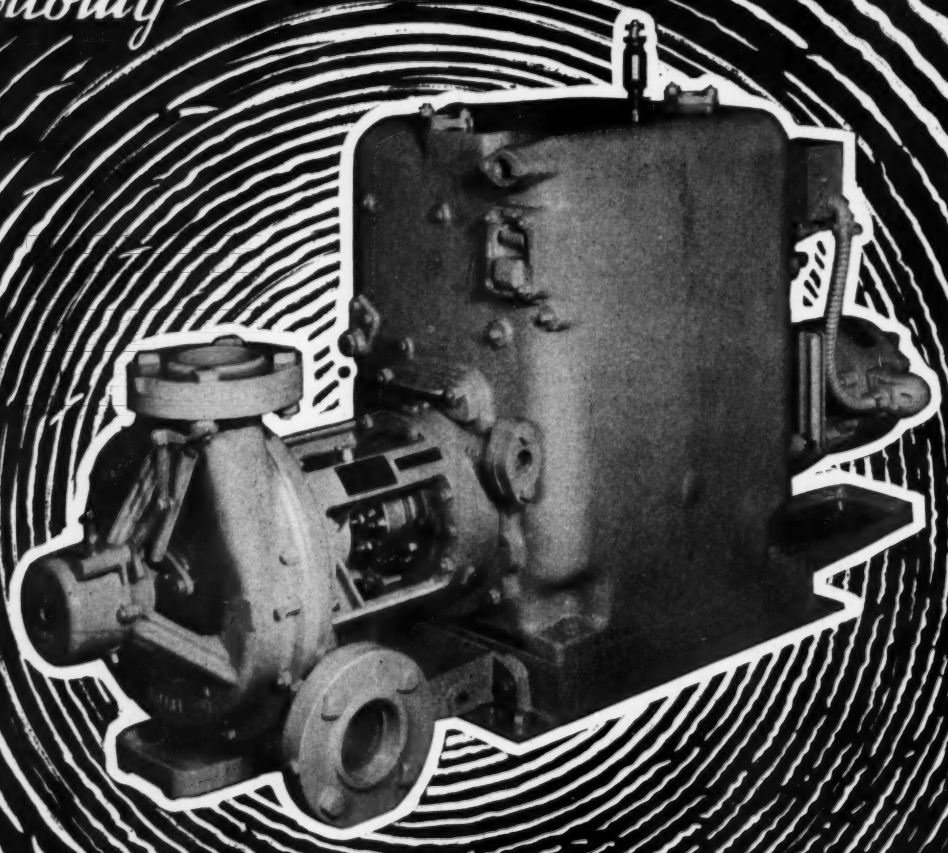
In addition to Deep Well Pumps, McDonald products include an extensive line of Water Supply Systems, Hand and Windmill Pumps, Cylinders, Pump Jacks, and a complete line of High Grade Plumbers' Brass Goods and Specialties. Write for Catalog of lines in which you are interested.

EST. 1856 McDonald

A. Y. McDONALD MFG. CO. DUBUQUE IOWA

Omaha Nebr. · Minneapolis, Minn. · Des Moines, Iowa · Kansas City Mo. · Sioux City, Iowa · Hutchinson, Kan.

Centralized Heating Economy



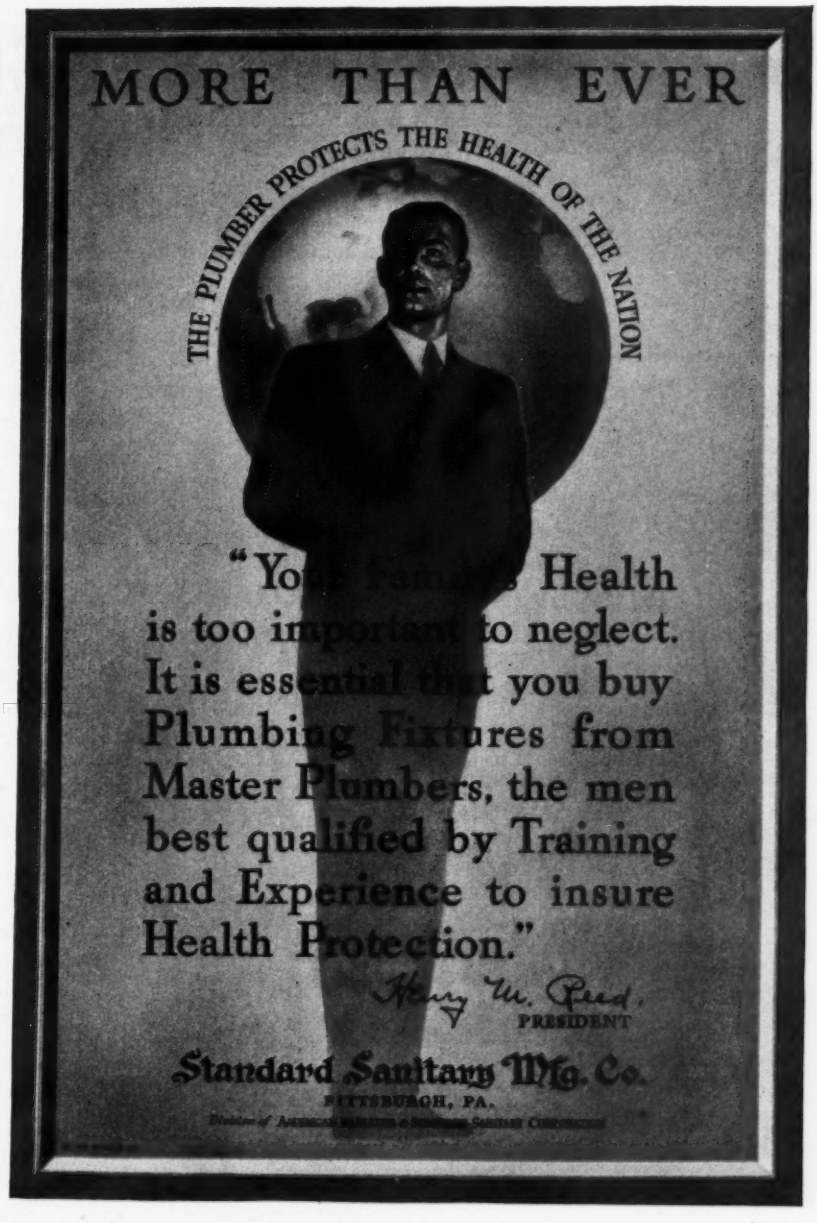
A RETURN LINE VACUUM PUMP THAT CUTS HEATING COST.

This unusual pump needs no electric current, cutting out greatest item of pump operating expense.

More important, this pump insures absolutely uniform circulation in system. That means continuous steam economy.

Simple, compact, one moving element, no wearing parts, no internal lubrication. Bulletin No. 203 gives the facts. Your copy is waiting.

THE NASH ENGINEERING COMPANY
SOUTH NORWALK, CONNECTICUT, U. S. A.


MORE THAN EVER
THE PLUMBER PROTECTS THE HEALTH OF THE NATION
"Your Family's Health is too important to neglect. It is essential that you buy Plumbing Fixtures from Master Plumbers, the men best qualified by Training and Experience to insure Health Protection."
Henry W. Reed
PRESIDENT
Standard Sanitary Mfg. Co.
PITTSBURGH, PA.

HAVE YOU RECEIVED YOUR COPY OF THIS POSTER?

Copies of this attractive poster, printed in seven colors, have been mailed to all Master Plumbers. If you haven't received your copy, write for it today!

Standard Sanitary Mfg. Co.

PITTSBURGH, PA.

Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

BETWEEN OURSELVES

Thanks:
"Many articles in your magazine have been of immense value to me."
G. F. M.
Newburgh, New York

Management Of Trucks

There is an old saying which tells in effect that the amount of money you make isn't as important as the amount of money you save. Management might be considered another term for the word "save," insomuch as the two are so closely related.

In this issue there is an article on the management of trucks. It is not based on one contractor-dealer's experiences or records. Instead, a special eastern representative made a survey for our readers and from this obtained a cross-section picture of how a considerable number use effective management of their trucking equipment so as to cut corners on overhead and to make the most of their investments. This article covers subjects ranging from the value of a painted sign on the side of a paneled truck to how a truck should be routed to give most economical service.

With the new year being a season for questioning former methods and adopting new practices, this article is especially timely.

Water Heating

Water heating is a subject which is scheduled for a great amount of attention in 1936. At a recent meeting of the Assn. of Gas Appliances and Equipment Manufacturers, it was decided that this association, together with the water heating committee of the commercial section, American Gas Assn., would launch a drive beginning on February 1 to promote and encourage the sale of automatic gas water heater equipment. This campaign is characterized by a contest which is scheduled to run until September 30. The goal is to make 300,000 more automatic gas water heater sales and the contest is described as being the first national gas water heater contest ever run.

A preliminary announcement of this campaign is the subject of one of the articles in this issue.

A Balanced Viewpoint

The first article in this issue is divided in two parts. On one side there are comments from such outstanding national business leaders as Alfred P. Sloan, Jr., pres., General Motors Corp.; Col. Leonard P. Ayres, vice pres., Cleveland Trust Co.; and Roger W. Babson, statistician and economist. On the other side there are national figures in our industry, such as Henry M. Reed, pres., Standard Sanitary Mfg. Corp.; P. R. Mork, vice pres., Crane Co.; Rolland J. Hamilton, pres., American Radiator Co.; and Walter J. Kohler, pres., Kohler Co.

We wrote to the first mentioned group with the request that they give us for our readers their viewpoint in regard to the national economic picture and the relation of the construction industry to this broad picture.

In writing to the national figures in the second group, our request was that they tell us of their outlook on the construction industry and the influences which the general economic picture would have on it.

In other words, we have wanted to give our readers an idea as to the effect of building on business in general, and the effect of business in general on building.

Old Joe's Bathroom

Just after the December issue had gone to press, one of our correspondents dropped in to see us on one of his periodic visits and laid on your editor's desk a short article. He didn't say much other than to ask if we would read it and give an opinion on the possible interest of readers in the story which had been told him by Mr. Ray Ferguson, an outstanding plumbing and heating contractor in Chicago. We read it immediately. Our reaction was that it described one of the most powerful selling forces plumbing and heating contractor-dealers can use. In addition, the punch at the end of Mr. Ferguson's story was startling.

You will find the story of how Mr. Ferguson sold Old Joe's bathroom in this issue. Also, you will find a photograph of Mr. Ferguson's attractive show window, illustrations of some of his installations and further evidences of his outstanding ability as a modern merchandiser of plumbing and heating products and services. While Mr. Ferguson has time to be friendly, never-the-less, he applies modern and approved methods of merchandising.

Here is one more tested way in which established contractor-dealers can meet effectively mail order, d.t.u. and chain store competition.

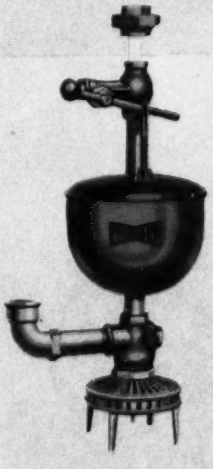
The result is of a decidedly optimistic nature as far as business prospects in our industry are concerned for the coming year.

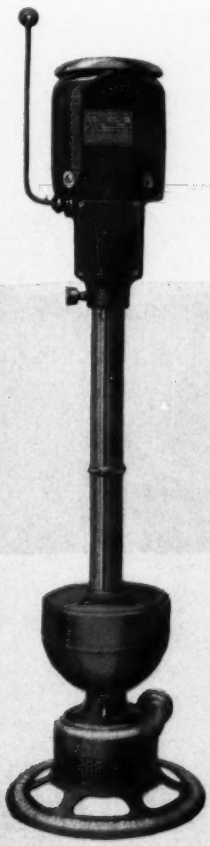
Your Editor

OUTSTANDING PERFORMANCE

for removing seepage water

PENBERTHY AUTOMATIC CELLAR DRAINER
(Water or Steam operated)
Made in 6 sizes





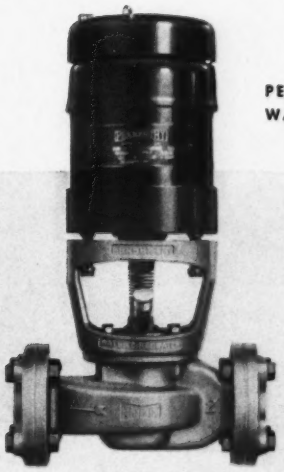
PENBERTHY AUTOMATIC ELECTRIC SUMP PUMP
Made in 6 sizes

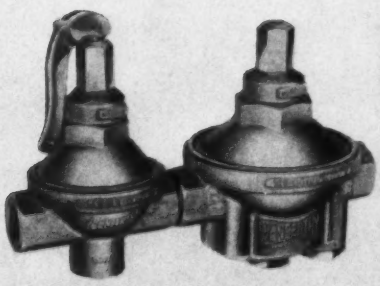
Advanced and rugged design, copper and bronze construction throughout, and careful workmanship are responsible for the demonstrated superiority of these Penberthy pumps wherever seepage water accumulates. Leading jobbers stock Penberthy products.

PENBERTHY PRODUCTS

for modernizing hot water heating systems

PENBERTHY WATER CIRCULATOR
Made in 3 sizes



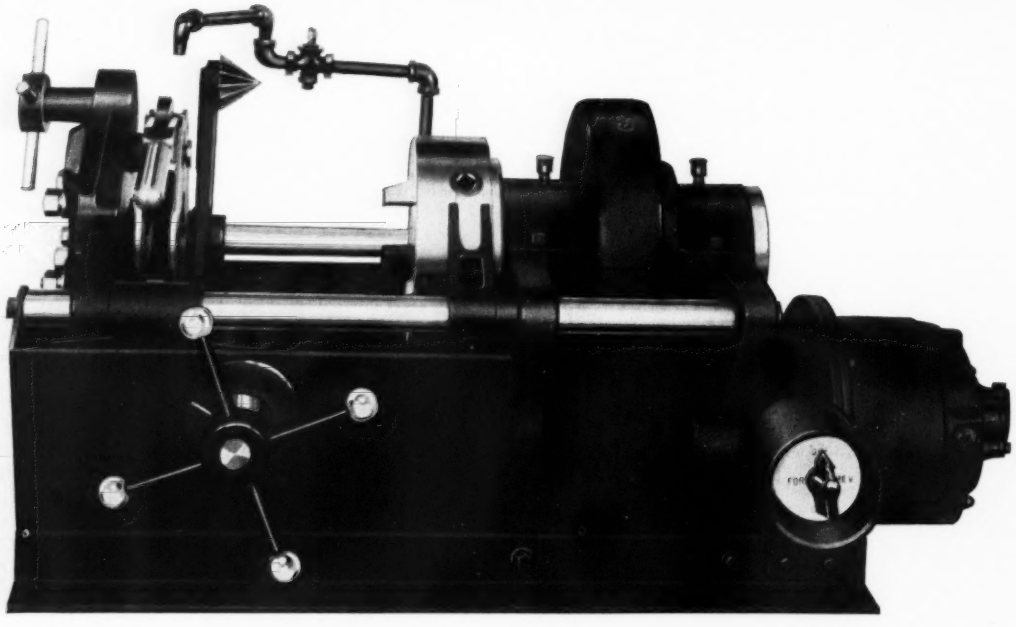


PENBERTHY PRESSURE & RELIEF CONTROL
Made in 2 Models

Relief valves and pressure reducing valves are other items in the line of Penberthy Hot Water Heating Specialties. All are constructed of high grade steam bronze; design and workmanship are also of exceptional quality. Your jobber will gladly give you complete information and supply your needs.

PENBERTHY PRODUCTS

PENBERTHY INJECTOR COMPANY
Manufacturers of QUALITY PRODUCTS *Since 1886*
DETROIT, MICHIGAN • *Canadian Plant,* Windsor, Ont.



"Toledo" No. 999 ½" To 2" Portable Power Pipe Machine

IN NO OTHER 2" PORTABLE PIPE MACHINE CAN ALL THESE FEATURES BE FOUND. WHY TAKE LESS?

1. Separate die head and dies for each size pipe.
2. Adjustable opening die heads of the hinged type—wearing points renewable.
3. 1" to 2" dies of High Speed Steel.
4. Safety friction gear.
5. Geared scroll universal chuck protected with wrench ejectors.
6. Centrifugal oil pump—operates in either direction—no check and relief valves.
7. Four knife cutter.
8. Speed—2" pipe threaded 22 seconds in Super Model and 31 seconds in Standard Model. 2" pipe cut off 15 seconds.
9. Renewable round ways supported at both ends.
10. Compact with low center of gravity.
11. Ball bearing motor.
12. Twelve fluted reamer of the swinging arm type.
13. Deep wide chip pan—no splashing of oil.
14. Convenience of operation—Two inch nipples as short as 3" can be made in Super Model without nipple chuck—3½" in Standard machine.
15. Convenient dial type thread length indicator.

NO. 999 STANDARD MODEL WITH 6 NON-OPENING DIE HEADS AND DIES **$285.00**

NO. 999 SUPER MODEL WITH 6 QUICK-OPENING DIE HEADS AND DIES **350.00**

F. O. B. TOLEDO, OHIO, OR DEALER'S STOCK

The Toledo Pipe Threading Machine Company

Toledo, Ohio **New York Office and Display, 72 Lafayette Street**

"TOLEDO"

BEFORE YOU BUY ASK FOR A "TOLEDO" DEMONSTRATION

OUR INDUSTRY

January, 1936

What Does The Inventory Show?

IN this brief space there can be no thought of taking a complete inventory of our industry or of considering all of the factors which, during the past year, have exerted an influence on it. However, there are some outstanding developments which are significant from a broad viewpoint and which can form the basis of further action in 1936. These can be considered here at this customary inventory-taking time of the year.

First, it should be pointed out that tangible and very considerable progress has been made by our industry in the march back to normal conditions. Of chief significance at this time is the fact that this progress has not been of the hit-or-miss type. Instead, it represents the result of action on the part of a purposeful industry.

Consider the FHA.

The plumbing and heating industry was the first to get in motion on the FHA for the purpose of taking advantage of the business-building opportunities it presented. The result was that very quickly after the FHA machinery was set in motion, surveys showed more than $29.00 of every one hundred dollar's worth of business generated by FHA went for the sale of plumbing and heating products and services. Even today, more than one year later and after other branches of the construction industry have got in motion, an analysis of 250 loans made by a prominent bank in one of the larger cities shows that 25 per cent of the FHA money advanced in these 250 loans has gone for plumbing and heating.

To us, all of this merely represents the clear-sighted ability of our industry to recognize business-building opportunities and to take full advantage of them.

During the early stages of the FHA, action required of individuals in our industry, to get the FHA started in their local communities was little short of amazing. Definite reports have come to us regarding the work of groups of contractor-dealers in overcoming the passive if not the active opposition of local bankers, in their efforts to obtain finances for remodeling jobs in project. In one instance brought to our attention, it was even necessary for them to hire an executive whose function was to investigate applications for loans and to do all of the work preliminary to making a loan which normally would be done by a banking institution.

To us, all of this merely is evidence of the actvity of purposeful individuals in a purposeful industry.

Of further significance, in reviewing the activities of our industry, is the fact that one of the biggest conventions ever held by the National Assn. of Master Plumbers was staged in Chicago last June and that it coincided with the time set by predictions for the positive up-turn in American business. To us, this can only mean that our industry is keyed in with business in general. It indicates an absence of a time lag generally ascribed to the building industry. It is further proof of the alertness and purposefulness which is keeping our industry in the forefront of American business.

No inventory of our industry for the past year would be complete without adequate mention of distribution. Despite repeated efforts on the part of various interests to circumvent the different branches of the established channels of distribution in our industry, during the past several years, our industry, through its purposefulness, stands in a position today which is even stronger than before it became subjected to these attacks. Each branch of our industry has proven again that it has a function to perform which must be carried on regardless of who may elect to do it. Again it has been proven that any slighting of any one of the steps in the established distributive system is reflected in a slighting of the best interests of the ultimate consumer.

In this inventory, on the side of live assets can be entered new and broadening opportunities which are the results of this completed year of accomplishments. It merely remains for us to augment our efforts and to continue our purposefulness in its present direction.

BUSINESS

in general and how it is affected by the building industry, is discussed on this page by business leaders of national importance

Sloan

Alfred P., Jr., pres., General Motors Corp.

Each year, as it passes, adds just that much more to man's storehouse of knowledge and experience. Thus we progress. The year 1935 is no exception to the rule. From an economic standpoint, a most interesting lesson may be learned—one to remember. And it is that, irrespective of the wisdom with which we may manage our affairs, the reaction from an excessive deflation tending to bring about economic recovery is just as irresistible as the influence of an excessive inflation tending to cause economic reaction. We survived the onslaught of the receding depression, after all, just as we have survived other depressions of the past. History has thus repeated itself. And, this is being reflected in returning confidence, resulting in a gradually improving trend of business and industry. Times are better. For all that, we have every reason to be thankful.

As we look into 1936, while recognizing our limited horizon of observation, I see no reason to believe other than that this improvement can be sustained. As a matter of fact, I believe that it is perfectly possible to accelerate the progress of 1935 and to broaden it into a sound forward movement extending all along the line of constructive endeavor. The fundamental factors bear evidence of such a possibility.

Babson

Roger W., statistician and economist

Providence, R. I.—(Special)—The secret of American economic recovery lies "in the encouragement of new industries such as air conditioning to put men to work and to attract capital," Roger W. Babson, internationally-known economist and statistician said in an exclusive interview here for DOMESTIC ENGINEERING.

With a definite program for pulling the country out of the depression by "putting men to work in new industries," Mr. Babson, his eyes sparkling, and his grey Van Dyke beard giving the only indication of his 61 years, offered his own formula as a "program which will succeed if tried."

"It is perfectly obvious to every one that we must have something to take up the slack in employment," Mr. Babson said. "Well, the answer to that is that we must develop new industries—such as the air conditioning industry in home units so that people will spend to obtain the new improvement and capital will flow into the industry. Now to develop this industry I would urge that Congress at the January session pass a law exempting from taxes the capital stocks of air-conditioning companies, and other companies engaged in the development of new ideas. The result would be an immediate flow of capital into those stocks and the companies would develop more rapidly. Great new American industries would be substituted for those which have already reached their saturation point."

"The air conditioning industry should be to the growth of America what the automobile and the radio have been," Mr. Babson commented. "The automobile put hundreds of thousands to work; so did the radio. What they did the air conditioning industry can now do if given a chance to develop."

Mr. Babson reverted to his theory about the growth of new industries and said, "Now if there were some other industry to which the unemployed could go, then there would be no unemployment problem. That is exactly why I am anxious that the government start thinking along the lines of new development. New industries could be called the new frontiers of America. We hear people say, 'we have no frontiers now,' but the fact is we do have frontiers; air-conditioning, better made homes, and I might add television, are but three of them. Develop them by all means. I sincerely urge this idea on Congress and the administration."

Beck

Thomas H., pres., The Crowell Publishing Co.

We have always been convinced that large expansion of the construction industry will be of great benefit to the American people. The housing shortage is acute in many sections of the country, and there is great need of more and better homes. Substantial progress has been made in the invention and perfection of numerous materials, devices and utilities which will make possible the construction of better homes than we have ever pos-

(Continued on Page 88)

CONDITIONS

in the construction industry and how they are influenced by business in general, are considered here by leaders in our industry

Frank

George W., pres., National Assn. of Master Plumbers

It appears to me that the year 1936 will be an important one for the plumbing and heating industries. All indications point to an increased volume of available business. Certainly the experience of the members of the industry during the depression should have sufficiently impressed them to make these increased business opportunities result in a profit.

The fact that 1936 will be a good business year emphasizes the need for consolidating the gains made by members of the industry in the preceding year. Too often, increased business serves as a specious excuse for inactivity in individual and association affairs.

With more business available, competition will be intensified, and it is only through a strong association, and a general dissemination of sound business principles, that the intensified competition can be kept within bounds and not be permitted to disrupt our industry.

I wish the readers of DOMESTIC ENGINEERING a most prosperous New Year. I believe that individual and collective energy will receive a greater reward in 1936 than in any period within the past few years.

Reed

Henry M., pres., Standard Sanitary Mfg. Co.

Everyone in the plumbing industry can rejoice over the outlook for 1936. America is starting to build the new homes she needs so badly, and this means better times not only for our own industry, but for everyone—merchant, mechanic and professional man.

No other industry furnishes such a wide distribution of the consumer dollar as building. It is estimated that 85 cents out of every dollar spent in building is paid out in some form of wages. And the interesting part is that everyone, including the owner, benefits.

For example, the family that builds a new home or modernizes an old one, now gets the benefits of the new materials, new designs and new comforts offered today. The money spent is an investment in security for the future. It brings peace and contentment, which only comes when you have a home of your own in which to work out your own individuality at your own pleasure.

New building and modernization means work for carpenters, bricklayers, plasterers, electricians, painters, plumbers, steamfitters and many others. It means work for mills and mines, railroads and trucks, factories and shops. And these provide wide distribution of money for merchants, professional men and tradesmen.

Thus, everybody gains something when new building starts, because we add to the property inventory of the nation, subtract from the cost of upkeep, multiply home comforts and divide the work among a great many people.

America today is at least six years behind the normal building program necessary to meet the requirements of increased population, marriages and demands for better housing. Obsolescence, fire and demolition have made more homes uninhabitable the last few years than we have built. Therefore, we can safely build at least 200,000 new homes for the next five years and not exceed the demand.

The great progress made by the plumbing industry in modernization work shows clearly the opportunity which lies ahead. Only master plumbers are qualified by training and experience to assure satisfactory service and protection to health.

This year will be a challenge to our industry. And we confidently believe that the master plumbers will meet it and prove without the least shadow of a doubt that the "plumbing business belongs to the master plumbers."

Mork

P. R., vice pres., Crane Co

When general business is good, the building industry is active; when the building industry is active, general business is good. Prosperity and building seem to go hand in hand. This illustrates both the importance which building holds in the business world and its dependence upon conditions beyond its scope. An industry so vital to the remainder of economic life and so dependent upon all other lines of endeavor cannot be expected to be fully in control of its destiny.

The following two characteristics must always be reckoned with—a slowness to move, and an elastic ca-

(Continued on Page 143)

Start Second Campaign in Water Supply Drive
Second FHA Prize Contest
Total Value of Prizes
$1,600.
Complete Announcement of
1st Prize
N. A. M. P. Holds One of Conventions in Its
the Biggest
History
Manufacturer to Wholesaler to Contractor-Dealer Is Best
PLUMBING & HEATING

Highlights of

• • • **FHA** A year ago, one of the brightest spots in the horizon for the building industry was the FHA which, at that time, had been in operation only a few months. Actually, it was just getting under way and real benefits from it were not to be expected until later in 1935. In thinking of the FHA, it is practically impossible not to think of the contests which were sponsored by representatives of all the branches in our industry for the purpose of stimulating everyone to increasing efforts in making the most of all the opportunities presented by the FHA. The illustration at the upper left shows John J. Calnan, former president of the N.A.M.P., awarding the first FHA prize to John Kuenzli of the Hillcrest Plumbing and Heating Co., Oak Park. This was in January.

• • • **2nd Contest** A bigger and better second FHA prize contest was launched immediately so as to further stimulate our industry in taking advantage of the FHA opportunities. This came in February and March and the grand prize of an International motor truck was awarded to Moersch & Degnan of Escanaba, Michigan. Center photograph shows Ward M. Canaday, assistant to the administrator, FHA, awarding the prize at the N.A.M.P. exposition in Chicago in June.

• • • **Distribution** Of outstanding significance to our industry in 1935 were the positive evidences of the recognition that the established channels of distribution work to best advantage for all concerned. To quote:

"Following two years of intensive research and sales experience, and after careful analysis of all the existing methods by which plumbing ware reaches the consumer, we have decided to adopt the policy of distributing from manufacturer to recognized plumbing wholesaler to plumbing contractor-dealer to consumer."

Air Cooling With Well Water Opens Home Market for
Electric Water Equipment
A Reader Suggests a Problem and an Engineer
"Continue FHA"
WHO AND WHAT ARE "LEADERS IN THE UP-SWING?"
NEWS of the SUPPLY FIELD
Air Conditioning with Radiator Heat Given a Preview at Chicago
93.6% Show Gains
AMERICAN BUILDER
BANKERS
REAL ESTATE
AMERICAN ARTISAN

1935 *in Review*

• • • **N. A. M. P.** Aside from being one of the biggest conventions in its history, the N.A.M.P meeting held in Chicago in June gave positive evidence of our being in the up-swing to better business. The convention stands out as one of the bright highlights of the year.

• • • **Air Conditioning** Another 1935 highlight is the work which was done in developing the application of water supply equipment to air conditioning. The groundwork has been laid for much additional progress to be brought about in 1936.

• • • **Leaders in the Up-Swing** In August, Leaders in the Up-Swing campaign was launched as the third step in a planned program to promote business for the plumbing and heating industry, the first and second FHA prize contests being respectively the first and second steps of this sales promotional effort.

• • • **Water Supply** The further drives of the Electric Water Systems Council to promote the sale of water supply systems also represent distinct highlights in the 1935 picture.

The significance of this campaign to our industry is emphasized when it is pointed out that the water supply forms the heart of any plumbing system and paves the way for the sale and installation of plumbing and heating equipment.

• • • **Continue FHA** Because there are still outstanding benefits to be derived from FHA, 1935 marked the beginning of concerted efforts to bring about the extension of this agency for promoting business in the building industry. One feature of these efforts was that of stimulating the business magazines of different branches of the building industry to arouse their readers

(Continued on Page 145)

FHA

One Year Later

". . . The FHA has been the balance, this year, in the scale between good business and bad"

ACCORDING to a release of the FHA dated December 11th, the total volume of modernization and repair work developed by the FHA program was estimated at $1,132,091,713 at that date. This is an amazing total when it is realized that up to that time this administration had been operating only sixteen months.

As a matter of comparison, this volume of modernization and repair work is greater than the total estimated volume of new construction that took place in 1934.

That this program has had a most beneficial effect on our industry is indicated through the fact that many staple plumbing and heating items during 1935 were selling at a rate that equalled sales in the so-called normal years, while no items in the field were selling at less than 50 per cent of the so-called normal. At the same time, new construction was estimated to be running at less than 20 per cent of normal. The great volume of plumbing and heating business, therefore, must be coming from modernization and repair work.

The same release of the Federal Housing Administration, mentioned in the foregoing, stated that the total amount of low cost housing mortgages that have been accepted for insurance up until December 9 amounted to $501,733,047. Inasmuch as the total volume of new construction in 1934 was estimated at slightly less than $1,000,000,000, it can be seen readily what an important part the FHA is playing in the present revival of new construction.

The following comments discuss the effects of more than one year's operation of FHA on our industry. These remarks are from Russell G. Creviston, director, advertising and promotion, Crane Company.

BUYING on the installment basis has been in practice for a great many years, but even today in the minds of at least a few people there is a stigma attached to the thought. They think of it only as a means for getting into debt above one's ability to pay. Thanks to Title I of the FHA, the number, who think this, has been reduced greatly. Placing the prestige of the government behind the modernization program under Title I has done more to make known the sound investment angles of time payment buying than anything in recent years.

Because the government took a hand in formulating and promoting the program, many became convinced of the soundness of this type of investment who otherwise would not even lend an ear to the pro arguments. Individuals who had distrusted it came to use it and banks which belittled it came to encourage it.

The great amount of publicity given to the FHA modernization program and the lowering of interest rates have been two important features of a practical aid to sales. They have stimulated many to do something about improving their properties, who might otherwise have hung back indefinitely. The increase in business as a result of the program has been real. Time payment sales of plumbing and heating materials have improved at a rate which outstrips the improvement in building activity and in general business conditions. Our company's time payment (only) contracts in 1935 ran 122 per cent ahead of 1934 and most of this increase was due primarily to Title I of the FHA.

Many buildings had reached a serious condition of disrepair. Owners realized the need for improvements, but often found it futile to try raising the sums needed to finance the plan. By removing this element of futility, Title I not only opened the doors to necessary repair business, but also encouraged them to be receptive to new ideas of comfortable living. Because of this, Title I served as rallying point around which plans to stimulate all building—new and remodeling, residential and industrial—could be revolved. This Title I modernization program will steadily aid to open other markets just as it did the residential and, therefore, should be extended through the year 1936 at least.

The subject of the FHA and what it has accomplished for our industry are discussed in the following by L. H. Goldbright, Jr., vice pres.-treas., Heating and Plumbing Finance Corp., division of American Radiator and Standard Sanitary Corporation.

THIS subject is an appropriate one in view of the fact that the heating and plumbing industry was the first to finance a modernization job in the United States under the FHA Plan, on August 13th, 1934. The subsequent initiative developed by the FHA in promotion activities has brought about a successful culmination of an idea that has been expounded in our industry for a period covering at least the last twelve years.

The Federal Housing Administration has brought to the attention of the property owners of the United States, the opportunity and desirability of bettering their living conditions and rehabilitating their buildings. This was accomplished in part by appealing to their patriotism to join the movement to get more people employed; by making them conscious of the crying need of most buildings for rehabilitation and by emphasizing the low prices at which it could be done; coupled with the medium of financing such rehabilitation through a convenient method of instalment payments at the lowest rates ever available.

The FHA activities also have had a decided tendency to stimulate heating and plumbing contractors to the

(Continued on Page 163)

250 Loans, 25% for Our Industry .....

FROM domestic servants to general managers of businesses, and through the whole gamut of occupations are found modernizers who have obtained loans under the modernization credit plan of the Federal Housing Administration to make their houses better homes.

One of the most prominent banks of one of the country's largest cities recently made a breakdown of the first 250 loans it had made under the modernization credit plan. They wanted to know:

1. Who were obtaining the loans?
2. What was the borrower's annual income?
3. For what purpose was the money borrowed?
4. The source of the loans?
5. The average amount loaned?
6. The term of the notes?
7. The record of the monthly payments?

The following table shows the occupations of the persons who obtained the 250 loans:

Occupations of Borrowers	No.	Occupations of Borrowers	No.
Domestic Servant	1	Production Superintendent	1
Advertising	6	Painter	1
Carpenter	1	Physician	2
Insurance	3	Truck Driver	3
Engineer	2	Illustrator	3
Foreman	11	Presser	1
Clerk	17	Retired	13
Teacher	12	Machine Designer	1
Salesman	13	General Sales Manager	4
Corporation Officials	23	Secretary	4
Janitor	4	Housewife	21
Traffic Manager	1	Public Utility	8
Machinist	3	Steamship Employee	1
Electro-Plater	1	Real Estate	3
City Employees	16	Club	1
Attorney	5	Garage	1
Rooming House Operator	2	Organization Entertainment	1
Accountant	5	Appraiser	1
Electrician	1	Retail Store	9
Auditor	2	Sports Writer	1
Barber	1	Projection Operator	1
Tailor	1	Catering Manager	1
Laborer	3	Minister	1
Corporation	1	Linotype Operator	1
Draftsman	3	Cutter	1
Engraver	2	Ediphone Operator	1
Baker	1	Dentist	1
Messenger	1	Buyer	1
Typewriter Serviceman	1	Stenographer	3
Boiler Washer	1	Reporter	1
Supervisor	4	Mechanic	1

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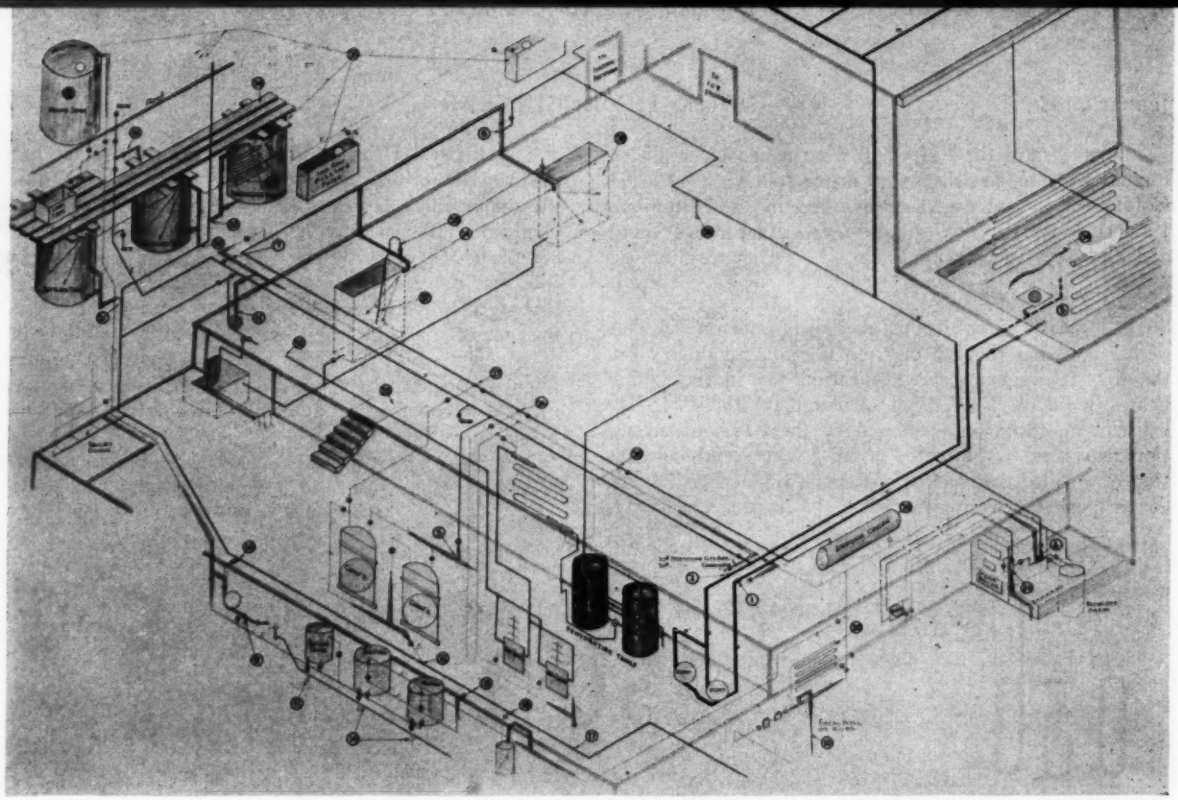

Fig. 1—Reproduction of drawing exhibited at Chicago laboratory demonstrations during N. A. M. P. convention. It should be understood that these connections are of a typical nature and should not be confused with the Federal inspections now started

Progress Report—

Reinspection of Federal buildings in New York City and Detroit is getting under way. Head is to be appointed

IN view of the widespread interest in the surveys of the plumbing in all Federal buildings in New York City and Detroit, it is felt desirable to give members of the industry the latest available, authoritative information. The following are the latest developments on the surveys, which were released as of December 18.

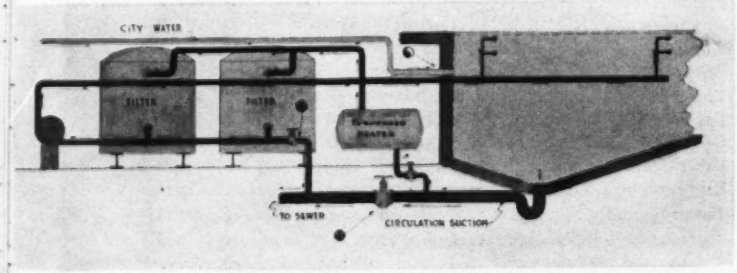

Fig. 2—Typical example of cross connections also exhibited at convention. Both this and the drawing reproduced above were prepared by the City of Chicago department of public works, bureau of engineering, water pipe extension, plumbing section

On November 15, 1935, President Roosevelt signed Executive Order No. 1090 reading, insofar as pertinent parts are concerned, as follows:

"General inspection of plumbing installations in all buildings owned by the Federal Government in New York City, N. Y., and Detroit, Michigan. Physical inspection, the collection of water samples from suspected local taps, the use of dyes to trace suspected cross connection of the water supply of the buildings with polluted supplies or sewers, the recording of inspections for permanent record including the drafting of sketches of plumbing connections, and bacteriological examination of water samples. Sponsor: Works Progress Administration. (State WPA No. 25)

New York	$163,784	O.P. 65-97-610
Michigan	19,716	O.P. 65-51-3972."

Since the approval of Executive Order 1090, the President superseded that order with another order, No. 1188, which does not change the above in any material particular. It will be observed that the surveys mentioned in the order are WPA projects and that Public

(Continued on Page 160)

Water Heating Campaign

Goal is for 300,000 new automatic gas water heaters to be sold in 1936. Contest is included to stimulate special activity

"BIG things are about to happen to automatic gas water heaters! Big sales opportunities are wide open to plumbing-contractor dealers! Big plans are afoot to make the automatic gas water heater known to every householder in every section of the country." These are the opening statements in an announcement from the Association of Gas Appliance and Equipment Manufacturers and the water heating committee, commercial section, American Gas Association. The occasion of these statements is to call attention to a campaign which is being sponsored by these two groups and which is being characterized by a prize contest for plumbing contractors.

Fig. 1—Copy of front cover of announcement to be sent to plumbing contractor-dealers. Attractive illustration at top of page shows window of Oklahoma Natural Gas Company. It is used for cooperating with dealers and suggests ideas for displays

On Dec. 28, at a special meeting of the water heating committee of the Association of Gas Appliance and Equipment Manufacturers, authorization was given for this national water heater sales contest for plumbing contractor-dealers. Seventy-five cash prizes totaling more than $10,000 and supported by sales promotion and advertising programs involving an expenditure of $100,000 are contained in the plan. The contest starts on the first of February and is to continue over an eight-month period.

Twenty water heating manufacturers are listed as having underwritten this promotional effort which is designed to stimulate and to assist plumbing contractor-dealers in the sale of automatic gas water heating equipment. This includes American Gas Products Corporation, Cleveland Heater Company, Crane Company, Premier Heater Div. Everhot Heater Company, Gas and Electric Heater Company, Gas Equipment Company, Handley-Brown Heater Company, Hoffman Gas & Electric Heater Company, Hotstream Heater Co., Lawson Manufacturing Co., Lovekin Water Heater Company, J. W. Moore Valve Corporation, Pittsburg Water Heater Corporation, Ruud Manufacturing Company, Sands Manufacturing Company, Surface Combustion Corporation, United American Bosch Corporation, Welsbach Company, Whitehead Metal Products Company and John Wood Manufacturing Company.

How Ferguson Meets d. t. u.

Aggressive and modern merchandising methods plus the time to be friendly, is plan

At the top of this page, in the circle, is a before view of an attic, the roof of which was raised to make way for an apartment. The after view of the kitchen shows Mr. Ferguson's work on this job. Immediately above, the two photographs show respectively Mr. Ferguson's show-window and a small corner of the display in his office

Old Joe's Bathroom

It might seem that an aggressive merchandiser could not have time to visit with prospective customers. This explains how it is being done by one contractor-dealer in competition with d. t. u. and with profits

I WAS up on West Sixty-third St., Chicago, chatting with Ray Furguson the other day when this story came up, illustrating one of Ray's proven theories about merchandising plumbing goods and services.

We'd been talking about the d. t. u. and chain store competition that has been absorbing the business by price cutting and high-powered advertising when Ray happened to remark:

"You know, we fellows haven't much to combat the d. t. u. and chain store competition with—except friendliness. The difference in quality between our equipment and theirs, for instance, is either not apparent to the customer's eye or, is too apparent to his pocketbook. But friendliness we have, and that's something a big store can't have. They haven't time to be friendly; they emphasize efficiency and speed, and a fifteen dollar a week clerk hasn't the incentive or knowledge to render friendly service."

I knew this idea of taking time to be friendly was one of Ray's "trump cards" in business so I said:

"I get the general drift, but just where does this idea bear fruit in the form of actual sales? It seems to me one could dilly-dally away a lot of time while taking an interest in the general populace and still not pile up a volume of business. How about a concrete example?"

Ray didn't even take time to think. He just looked at me and reaching for a cigarette, said: "Sure, I'll give you one. Anyway, you might be able to use it, for it's a good story. And if ever there was a barren case it looked like this was it. Yet, I got six hundred dollars worth of business just for being friendly.

"Last spring, a fellow we all came to speak of as Old Joe, although he wasn't more than sixty-three or four years old, began to drop in here now and then just to talk and while away some time.

"Old Joe had been a barber all his life and evidently the 'depression' had forced him into retirement because he always fancied that some day he would start back to work. And when he did, there were a number of things

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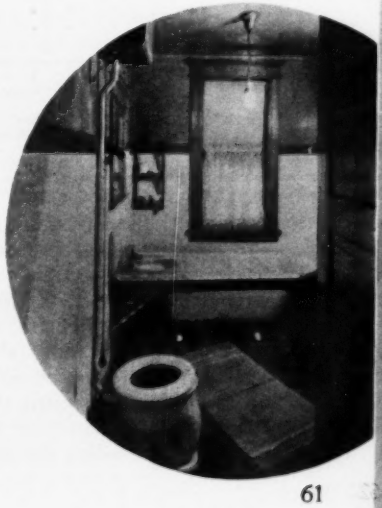
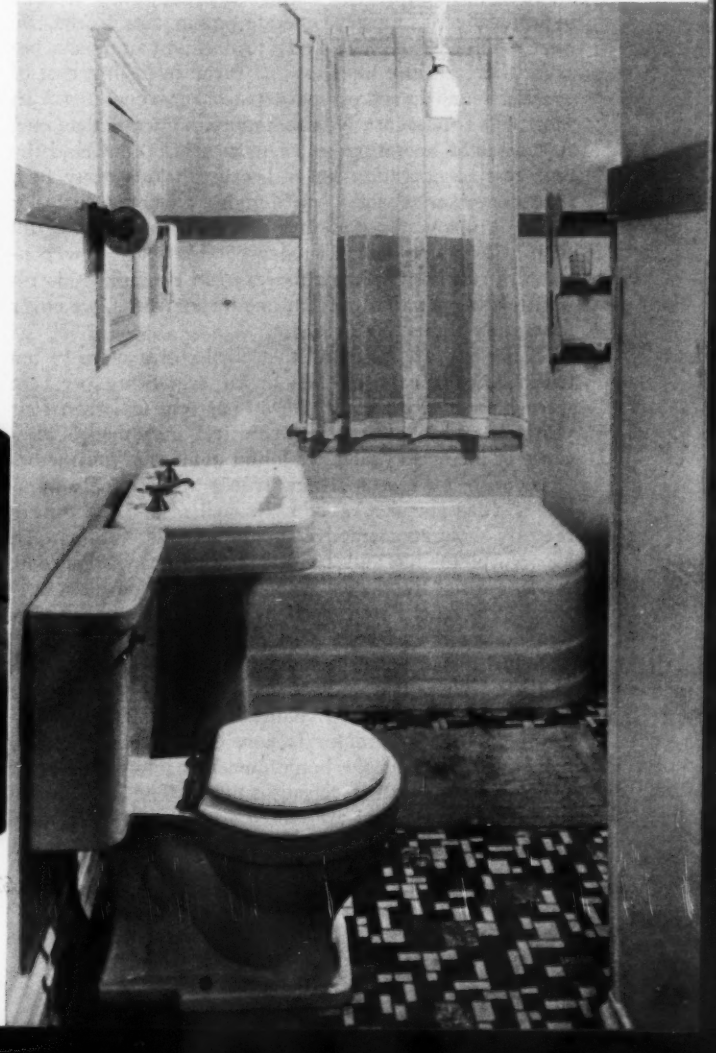


At the right are before and after pictures of still another Ferguson remodeling job. This is similar to the one sold to Old Joe in story



Management Article No. 1

There should be a continual check on the operation and management of a business and this article covers the trucking phase

Contractors Tell How Profits Can Be Made and Saved

ANALYSIS of figures compiled in a survey of middle Atlantic states to procure data on truck expenses and management shows that 85 per cent of contractors operate one truck, 10 per cent two trucks and 5 per cent more than two trucks. Because 95 per cent, as indicated by this survey, operate one or two trucks, we have confined this field study to one unit or truck, because there is little likelihood of variance in unit cost of operation unless six or more trucks are operated. In short, five trucks cost five times more to operate than one. A contractor operating six or more trucks may find the unit cost of operation lower because he may buy fuel, parts, accessories and service more advantageously or he may employ an automotive mechanic part-time or full time at a saving on maintenance. However, few contractors run six trucks or more, so in confining this report to the operation of from one to six trucks, we cover practically the entire field.

In our survey, we found that 80 per cent were ½ ton trucks, 20 per cent 1½ ton or larger. Sixty per cent were four or more years old, 30 per cent less than four years old and 10 per cent comparatively new models. Because of increasing sales we found numerous contractors considering purchases of new trucks and a goodly number, such as Harold A. Gahr, Belleville, N. J., who have recently bought attractive new models. William H. Moore, plumbing and heating contractor, Ridgewood, N. J., offered this logical explanation for the increasing number of trucks purchased by contractors in this section during the past year. He said, "Most contractors have had the same trucks since the depression began back in 1929. These trucks, because of their age, are obsolete and costly to operate, so naturally with more business coming in the contractor is considering truck replacements, the same as the home owner is now considering plumbing and heating replacements." The majority of new trucks purchased are closed panel jobs. The trend is getting away from the pick-up, canopy or screen body. Contractors are finding that the panel delivery body with attractive lettering is a rolling sales-builder.

In studying the problem we find that truck repairs and maintenance vary widely in all fields. For this reason, average costs cannot be given and would be of little use anyhow. License fees, gasoline taxes, fuel costs, insurance rates vary in different sections as do other factors, such as traffic conditions, road surfaces and union rules. In some sections, for example, union men may drive trucks, in other sections, not. Obviously, where union men require chauffeurs, truck expenses are higher. The human element also enters. Some contractors keep their trucks in good condition, others neglect them. Some drivers manhandle trucks, others treat them kindly. A truck operating in a congested city may be worn out at 35,000 miles from continual stopping and starting, whereas, a truck travelling the country may run well for

ESTIMATOR'S SHEET

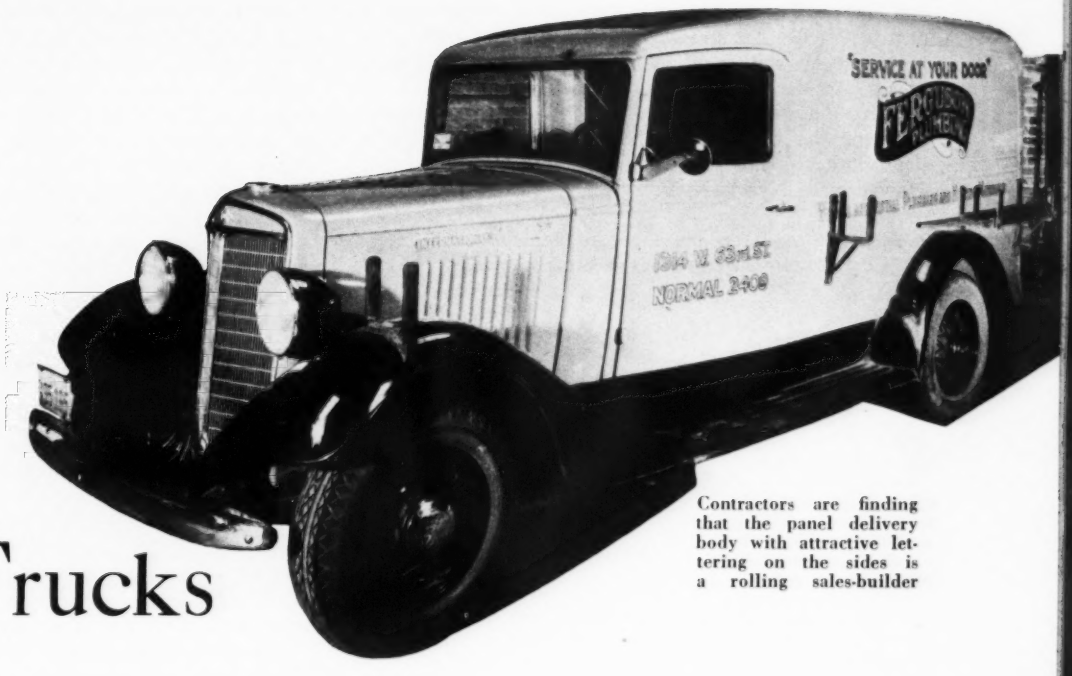
Name ..... Date .....

Address ..... Phone .....

DESCRIPTION OF WORK DESIRED

LIST OF MATERIAL REQUIRED	MATERIALS RETURNED
Above materials used on job	Above materials returned from job
Signed (Journeyman)	Signed (Clerk in charge of office or materials)
Date	Date .....

with Trucks



Contractors are finding that the panel delivery body with attractive lettering on the sides is a rolling sales-builder

100,000 miles. Different make trucks differ in performance too. All these variables make average costs on truck operation difficult to obtain and impracticable when offered. To be constructive, an article covering truck expenses and management must set forth fundamentals by which the contractor can minimize expenses and utilize efficient supervision. We shall follow this procedure.

According to J. Kyle, who supervises truck operation for Maier Brothers Company, Newark, N. J., which employs 25 men on modernization and uses three trucks, the major factors affecting truck expenses and management are:

1.—Direct operating expenses (mileage costs).
2.—Indirect operating expenses (time costs).
3.—Accurate records.
4.—Man behind the wheel.
5.—Routing and timing.
6.—Sales.

Direct operating expenses, which include gas, oil, tires, tubes and repairs, should not prove burdensome to the contractor, except where trucks are old or abused, says Mr. Kyle. In this contention, our own findings concur. However, Mr. Kyle did point out that truck expenses could be minimized by keeping tires properly inflated, using high grade oil and having trucks checked periodically for defects. A check-over is particularly desirable before cold weather starts to avoid breakdowns at a time when freeze-ups occur and plumbers' services are needed badly.

Albert Bormann, plumbing and heating contractor, Belleville, N. J., advised that direct operating expenses are often high when the truck is too light. The contractor should buy a truck that suits his load requirements and not skimp on purchase price of car. Buying a smaller truck to save a few dollars is false economy, says Mr. Bormann, because in the long run, direct operating expenses and depreciation will run excessively high. A ½ ton truck should not carry more than 1,200 pounds as an average load although manufacturers build these cars to carry more in a pinch. Where contractors have complained about high truck expenses, we found that they usually operated trucks too small for requirements. Some contractors reinforce lighter trucks by adding extra leaves to springs and bigger tires. The contractor who finds that truck expenses are too high might save money by trading in for a larger truck. Do not overload a truck continually if you wish to keep truck expenses down.

The truck that gives efficient service at the lowest cost per ton mile over a period of years is the best buy. Truck expenses decrease proportionately as the truck size increases, therefore, when unit hauling costs are considered it may be more economical to haul in large trucks than small ones if average delivery loads demand it.

RECAPITULATION OF TIME SPENT ON JOB WITH LABOR CHARGE

	Hours	Rate	Charge
Total time journeymen			
Total time helpers			

DATE TIME

Exact time of journeyman and exact time of helper are listed according to dates under this section of the form.

Indirect operating expenses, such as depreciation, license, garage rent, insurance, interest at 6 per cent on the depreciated value of the car at the beginning of the year, are known as time costs. They are unchanging. The contractor may retard depreciation by keeping a truck in tiptop condition but the value of a car depreciates with age as well as with mileage or condition. This is called obsolescence. We find that most contractors write their trucks off in five years, allowing 10 per cent of orig-

inal delivered price for salvage or junk value. Some contractors use the straight line method of figuring depreciation by writing off the same percentage each year, others use the retrogressive method of writing off 40 per cent the first year, 30 per cent the second and 10 per cent for the third. Just how the contractor figures depreciation is not so important, advise Worsfold and Hawvermale, Nyack, N. Y. What counts is the fact that

TRUCK EXPENSES

Truck No.	Month
Make	Driver
Total mileage for month	Hours of operation

	No. Gal.	Miles Per Gal.	Cost Gas and Oil.	Cost Per Mile
Gas				
Oil				

Total cost per mile.....

OTHER MILEAGE COSTS	COST OTHER MILEAGE COSTS	COST PER MILE
Greasing		
Tire and tube repairs		
Tire and tube wear pro-rated according to guaranteed mileage		
Washing		
Total cost per mile.....		.....

MAINTENANCE	COST MAINTENANCE	COST PER MILE
Truck repairs—materials		
Truck repairs—labor		
Painting (pro-rated)		
Reconditioning (pro-rated)		
Total cost per mile.....		.....

TIME COSTS (Pro-rated 1/12 Year)	COST TIME COSTS	COST PER MILE
Depreciation		
Rent		
Insurance		
Interest on book value Investment in truck—6%		
License		
Total cost per mile.....		.....
Combined total cost per mile for truck No....., month of.....		
Combined total truck expenses for truck No....., month of.....		
(Divide monthly mileage listed above into total truck expenses to get operating cost per mile.)		

he includes depreciation and interest on truck investment in his overhead, otherwise, when the time comes to buy a new car, he hasn't allowed for it and must operate the old truck at excessive expense. To keep down truck expenses, charge off adequate time costs so that customers pay for normal wear and tear in overhead. Also carry insurance and include this in overhead charges to customers. One bad accident may take a year's profits.

The general procedure for recording truck expenses is to enter gas, oil, repairs, etc., to their respective accounts and later charge to profit and loss. Truck expenses are figured in general overhead. Some contractors told us that they compared truck expenses for different periods by dividing the mileage into the expense to determine whether each truck is costing more or less to operate and when truck expenses are running at a certain high, a new truck purchase is advisable. Driver's wages are not included in these comparisons because the contractors wish merely to get the figures on truck expenses, not total operating costs. When arriving at the unit cost per mile for cost finding purposes, the driver's wages are included, also the contractor's time if he drives his men around. By dividing a truck's mileage for a certain period by the operating costs for that period, the contractor has the unit cost per mile so that when estimating he can include truck expense at so much a mile, but contractors, large and small in the territory surveyed, advise that this involves too much detail, requires continual changing and is less accurate than the method of charging truck expense and operating costs with regular overhead. Mileage costs, such as gas and oil, increase as the truck gets older, garage, tire and license costs remain the same, depreciation, interest and insurance decrease, making the unit cost per mile figure variable and troublesome. "The important thing is to know your right percentage of overhead, including truck expenses, and see that you include this percentage plus a net profit on all jobs," said Charles J. Samuel, plumbing and heating contractor, Montclair, N. J. "And if the contractor uses his own car for business purposes as many do, he should include this expense in his overhead, otherwise, his customers are not paying enough for his work."

More money can be lost through inaccurate recording of materials and time than on truck expenses, advise Shaker, Travis and Quinn, Poughkeepsie, N. Y. Where many mechanics are employed, a stock man should supervise material withdrawals. He will more than save his wages. Letting every Tom and Harry draw his own, causes loss and trouble. A small operator needs no

JOB TICKET

Name	Date
Address	Order No.

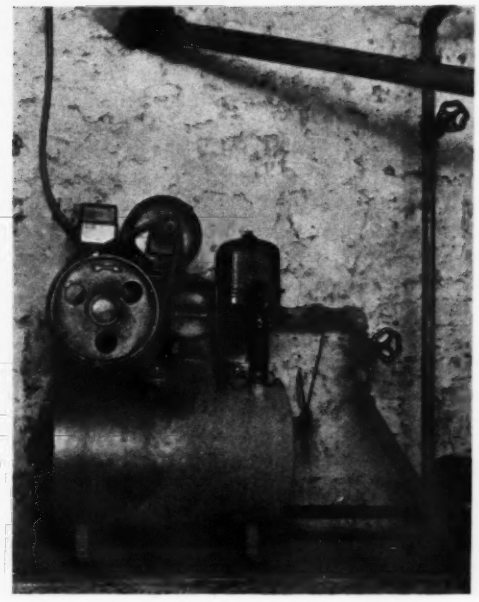
WORK TO BE DONE
(written instructions)

Journeyman	Exact time started (journeyman fills in)	
Helper	Exact time finished	
	MATERIALS USED	EXTENSIONS
Here materials used are listed by journeyman and later priced in office.		
Bill is made from this job ticket, figuring materials used and time as shown hereon.		

This work has been done to my satisfaction.

Signed.....
(Customer signs)

stock man but he must keep an eagle eye on materials, otherwise, he will lose much. Truck management methods vary, but Max Cohen, Newark, N. J., has devised a system that works efficiently and economically with 25 men on all classes of work. This contractor has plumbing licenses in 22 different towns which cost $275 yearly and gets more truck coverage than the average contractor. Our figures show that the average mileage on plumbing trucks is around 12,000 miles yearly and the average life of a truck is 6 years. Cohen's trucks do better than 20,000 miles yearly and he trades in his trucks every two years.



The illustration at the left shows a pump of a type used for shallow well water installations

Why Does a Pump, Pump?

Here is practical information on designing water systems

"WHY does a pump, pump?" The answer to this question needs more than a single statement.

By means of a piston or plunger used in connection with a set of valves in a pump, a vacuum is created in the suction line, and atmospheric pressure exerted on the surface of water from which supply is taken, pushes the water up in the pipe line to overcome the vacuum thus formed. We know that at sea level the normal atmospheric pressure is 14.7 lb. per sq. in. Also, we know that a vertical column of water 2.31 ft. in height shows 1 lb. per sq. in. pressure at the base of the column (regardless of the diameter of the column). Therefore, with an atmospheric pressure of 14.7 lb., and a pump capable of creating a perfect vacuum, at sea level, the water would be pushed up into the suction line 14.7 × 2.31, or 33.9 ft. Inasmuch as it is impossible to create a perfect vacuum, and since pumps are installed a varying distance above sea level, (depending upon the location) 26 ft. generally is given as the practical limit for a shallow well pump to raise water by the suction method, otherwise known as the atmospheric method.

We must divide pump installations into two classes—namely, shallow well pumps and deep well pumps. Any installation in territory 1,000 ft. or less above sea level, in which the water supply will not drop to a point more than 26 ft. below the pump, when delivering the desired capacity, will permit of a shallow well pump being used. If the elevation above sea level is greater than 1,000 feet, and it is desired to use a shallow well pump, it must be located closer to the water supply.

The following table gives the maximum lift possible for different altitudes:

SUCTION LIFT AT DIFFERENT ALTITUDES			
Miles	Feet	Theo. Lift	Actual Lift
Sea Level	0	33.83	26
¼	1,320	32.38	24.9
½	2,556	30.79	23.7
¾	3,960	29.24	22.5
1	5,280	27.76	21.4
1¼	6,600	26.38	20.3
1½	7,836	25.13	19.3
2	10,560	22.82	17.5

If the water stands, or will drop, below the maximum suction lift for a shallow well pump, we must use a deep well pump, which in the case of an installation requiring 20 gallons of water per minute, or less, usually consists of a deep well working head used in connection with a cylinder located below the lowest water level.

When approaching a prospective user with regard to the sale of a water system installation, some care should be exercised in securing information as to the conditions under which the pump or water system will

operate. The data given by the customer governs the type and size of unit required. A quotation should, therefore, be made with the understanding that the conditions are as given by customer. For instance, he should have a fair idea as to whether the water will stand within suction distance of the surface of the ground or not. If water does not stand within suction distance, he should be able to approximate the drop in water level. He should also have a fair idea as to the amount of water necessary for his requirements. If water is to be used for domestic service, the table given below will be of assistance in arriving at the capacity of pump.

WATER REQUIREMENTS FOR DOMESTIC PURPOSES

Total Average Daily Consumption		
For each member of family	30	gallons
For each cow	25	gallons
For each horse	15	gallons
For each hog	2	gallons
For each sheep	1½	gallons
For each 100 chickens	3	gallons
For sprinkling with ½ in. hose	200	gal. per hr.
For sprinkling with ¾ in. hose	300	gal. per hr.

In making a selection of the proper pumping equipment for any installation, care must be exercised to insure adequate supply for peak demands.

Another thing that should be checked particularly is the type of electric current available. Usually, for the small water systems, the current available is 110 volt, 60 cycle, single phase, and water systems are priced accordingly. It may, however, differ from this and in every case the customer should be asked the type of current available, and if the current differs, a careful check should be made, because if the electric current is direct current, or 25 cycle current, there is an additional charge made by the manufacturers for supplying such motors.

SIZE OF TANK TO USE VARIES

The size of the pneumatic tank that should be used depends also upon the service demand. For the small suburban or summer cottage, tanks having a capacity of ten gallons generally are used. For larger homes, tanks having a capacity of 40 gallons or more are recommended. It must be borne in mind that less than one-third of the tank capacity is available under pressure. The upper one-third of the tank contains air under pressure, and if sufficient water is drawn from the tank that it remains but one-third filled with water, the pressure becomes low.

Shallow well pumps should be located as close to the source of supply as possible. Suction lines may, if necessary, be run several hundred feet horizontally, if care is used in installing them. The suction line should rise gradually from the source of supply to the pump. Traps, or dips in the suction line should be avoided. The pipe line should be made tight to avoid leaks, and should be as direct as possible using few elbows, or bends. If the suction line is 50 ft. in length or less, use pipe of the same diameter as that for which the pump is fitted. Should the suction line be a long one, exceeding 50 ft. in length, or should it contain more than three elbows, it may be advisable to increase its diameter. This is determined by referring to a table giving friction of water in pipes. Determine from this table the size of suction pipe you should use. If the pipe friction when added to the vertical lift exceeds 26 ft., or the practicable suction limit, then check the next size larger pipe shown in the friction table.

Where long suction lines are used, a suitable foot valve and strainer should be located at the end of the suction line. If it is impossible, because of conditions, to place a foot valve at the end of the suction line, a check-valve with rubber or leather seat should be located in the suction line as near the source of supply as possible.

POINTS TO WATCH IN INSTALLATION

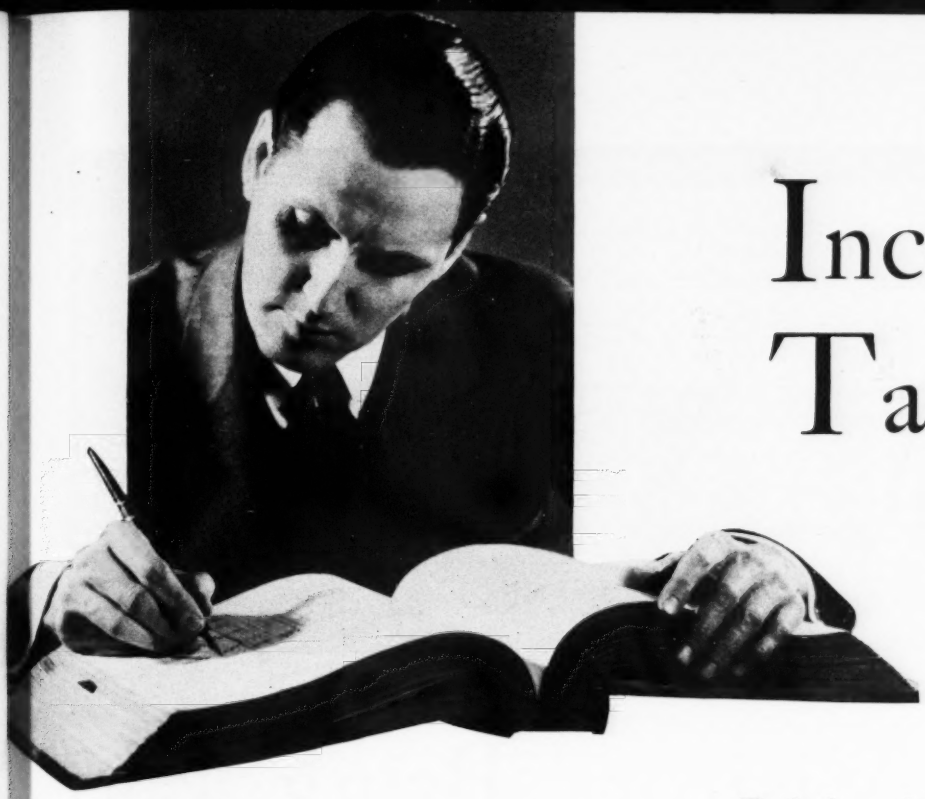
If conditions are such that any foreign matter may get into the suction line, a suitable strainer should be used at the end of the suction pipe, or located in the suction line, as any foreign matter drawn into the pump may interfere with the operation of the pump valves.

Care is necessary to see that in attaching the suction pipe to the pump intake, it fits properly without springing the pipe, as this puts a strain on the pump and may cause misalignment. Also, hanging a suction line to the pump without supporting same should be avoided.

The suction line should be tested for air leaks before the pipes are covered or buried. If the pump picks up suction readily after being primed and if there is no evidence of leaks, then it is safe to cover the pipes. If any difficulty is experienced with a shallow well pump in picking up suction, or in delivering considerably less water than is expected after the pump has been primed and the water allowed to stand in it over night to soak up the leathers, then the discharge line should be disconnected and water should be piped into a bucket or tank. If any air bubbles appear, it is an indication that there is a leak in the suction line which should be located and corrected. This seldom happens in the average job, but it is a precaution worth bearing in mind. In the majority of installations, it is not necessary to allow the pump to stand with water in the cylinder over night to soak up the leathers, but on extreme suction lifts, it is frequently necessary to do this, as in shipping, the leathers become more or less dry.

The size of the discharge pipe to be recommended depends upon local conditions and the amount of water supplied. If the discharge line exceeds 200 or 300 ft. in length, it is advisable in determining the size of pipe to use, to refer to the friction table mentioned in the foregoing. The larger the pipe line, the less the friction loss. For instance, if the discharge line is 1,000 ft. in length, and the customer desires 10 gallons per minute, 1¼ in. pipe should be used in preference to 1 in. The friction loss as shown by table through 1¼ in., is 2.18 feet per hundred feet or 21.8 feet for a total of 1,000 feet, which is slightly less than 10 lb. loss in pres-

(Continued on Page 86)



Income Taxes

Brief rules on how to comply with the new tax laws and regulations

THE tax problems of concerns vary according to the form of organization and the nature of the business. Federal tax problems present many very technical aspects, and thorough familiarity with the law's regulations and decisions is essential for the filing of returns and the making of payments. Today, more than ever, is a thorough knowledge of tax laws and regulations necessary because of the many changes in the tax laws in 1934 and 1935. To cover all the details of the various tax laws and regulations, is far beyond the scope of this article. But this article boils down the results of over four months of work in digesting tax laws and regulations.

CHANGES IN THE REVENUE ACTS

The Revenue Act of 1934 established an entirely new method of treating gain and loss upon the sale or exchange of "capital assets." Capital assets include all property held by the taxpayer (whether or not connected with his trade or business) but do not include stocks in trade of the taxpayer or other property of a kind which would properly be included in the inventory of the taxpayer if on hand at the close of the taxable year, or property held by the taxpayer primarily for sale to customers in the ordinary course of this trade or business. Gain and loss upon the sale or exchange of capital assets is recognized on a percentage basis dependent upon the length of time for which the asset has been held, as follows:

80 per cent if held for more than 1 year but not for more than 2 years;

100 per cent if held for not more than 1 year;

60 per cent if held for more than 2 years but not for more than 5 years;

40 per cent if held for more than 5 years but not for more than 10 years;

30 per cent if held for more than 10 years.

The amount of recognized capital gain which exceeds recognized capital loss is added to and becomes part of the taxpayers' ordinary income and is taxed at the normal and surtax rates applicable thereto. Such capital gain may be offset by the ordinary losses and other deductions of the taxpayer. The amount of recognized capital loss which exceeds recognized capital gain is deductible from the taxpayer's ordinary income only to the extent of $2,000.

In the case of corporations, the percentage reductions of gains and losses recognized upon the sale or exchange of capital assets do not apply, i.e., 100 per cent of all gain and loss is recognized. Corporations, however, are subject to the limitation upon the deduction of capital losses, i.e., to the extent of capital gains plus $2,000.

Gains upon distributions in complete or partial liquidation of a corporation must be reported in full (100 per cent) but losses upon such distributions are subject both to percentage reduction and to the limitation on the deductibility of capital losses described above.

For special rules applying to the determination of the period for which capital assets have been held, short sales, the failure to exercise privileges or options, the retirement of bonds, and bond losses of banks and trust companies, see the statute.

(Continued on Page 157)

3000 Visitors Bring 256

AN outstanding tribute to his faith in the sales-pulling qualities of the showroom was made Dec. 1 when W. H. Picard of Oakland, who is president of the California State Master Plumbers Association, threw open his magnificent new quarters at 4238 Broadway. He was formerly located at 5656 College avenue. His new location is not only on a heavily traveled thoroughfare, but one that carries traffic between the heart of Oakland's better shopping district and the more exclusive residential sections.

The store front is arrestingly modern, with a deep panel of white tile striped with narrow bands of aluminum. The show window level is treated with black tiling. Flood lighting effectively bathes the inside and outside, focusing the attention naturally and easily on the floor displays which feature modern ideas.

Fig. 1—At the top of this page is shown the new display rooms of W. H. Picard which illustrates his confidence in modern merchandising methods. Results already experienced have justified this confidence

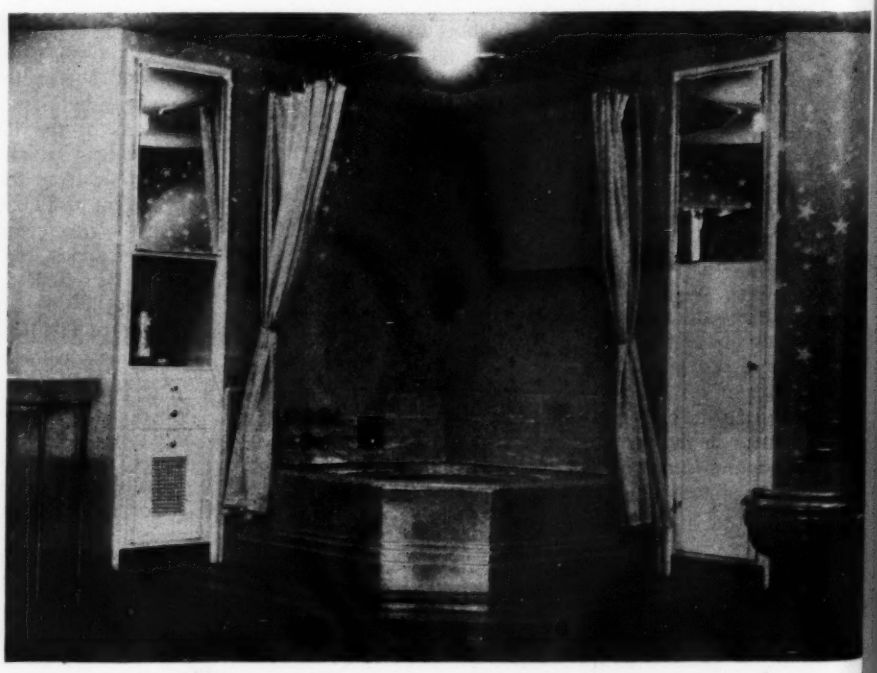


Fig. 2—At the right is a view of what Mr. Picard labels his deluxe bathroom. This is in full view from the street and has resultant benefits

Fig. 3—At the extreme right, on the next page, is what is labeled in this new showroom, a modern kitchen. This also is visible to passers-by from the street and does its selling work

At the right of the entrance is a display, built on kitchen equipment, with metal cabinets, kitchen and breakfast nook furniture and water heaters. There are two model kitchens—one for gas, the other for electricity. At the left of the entrance is shown the newest and finest in plumbing ware and appliances, displayed with a view both to modernization and building. At the extreme rear on this side is the de luxe bathroom, all fixtures being finished in pale cream. Also, there are well displayed showings of gas and electric water heaters, water softeners, washing machines, gas and electric ranges and circulating heaters.

A central stairway leads to the commodious offices, while the large shop and warehouse at the rear, with separate truck entrance, holds every item of equipment required in the plumbing business.

"During the opening days," said Mr. Picard, "we received 3,000 callers, including contractors, wholesalers and architects." In view of the leads developed in the

New Leads

direction of modernizing bathrooms and kitchens, as well as other work, it has been amply demonstrated that Mr. Picard was right when he decided that the present was the opportune time to go after the industry's share of the public's dollar now being spent largely for autos, radios and similar goods.

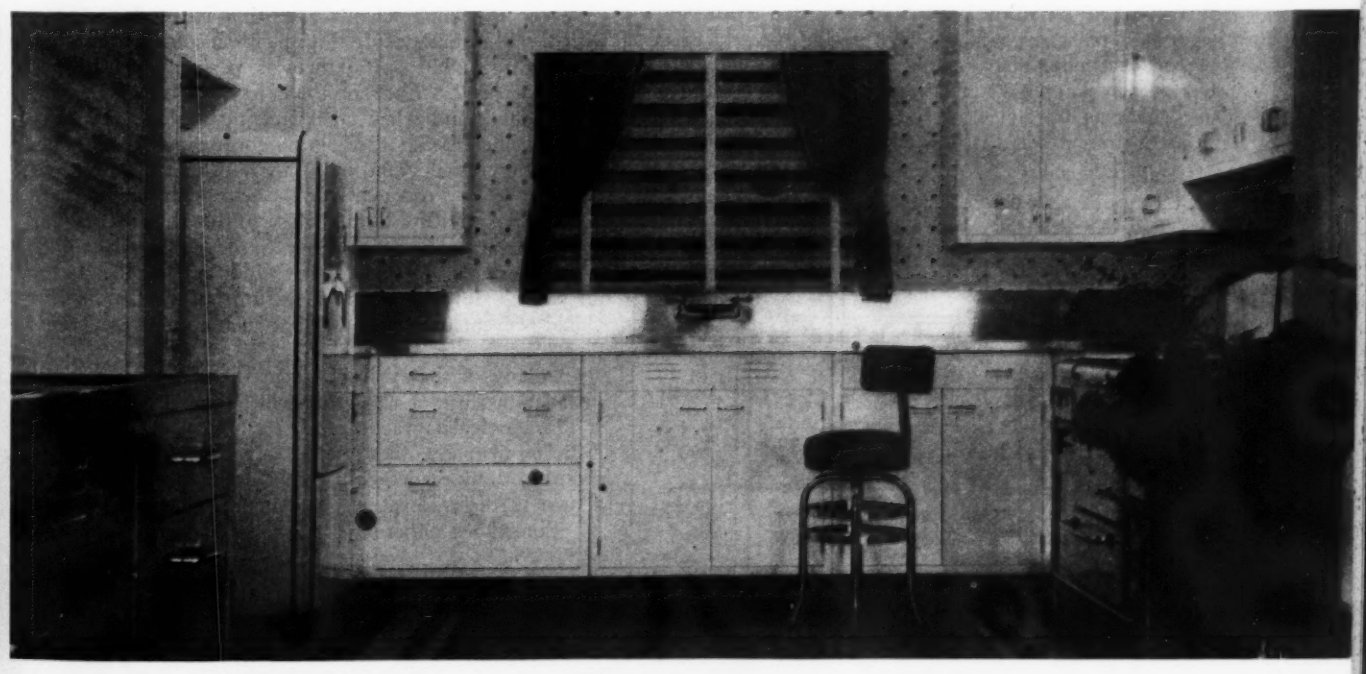
"As the result of the first two weeks of display, I now have better than 256 leads for modernizing work, of which I have reason to believe that 80 per cent stands for bona fide jobs. According to estimates, this will yield $70,000 worth of business."

This California master carefully avoids any semblance of high pressure salesmanship. "When asking people to visit our showroom they are not made to feel, either then or later, that they are being hounded. Their names and addresses, while often given voluntarily, are generally taken indirectly or develop during the course of conversation." . . . "I believe in furnishing prospects with plenty of literature to go over at their leisure."

5,000 PIECES OF LITERATURE USED

In connection with this matter of reading material it might be added that Mr. Picard gave out over 5,000 pieces of literature in the period between Dec. 1 and 15. Callers came from all over California and as far distant as Idaho. Every piece of merchanise on the floor was plainly price-marked. The keynote of Mr. Picard's sales policy is to use every legitimate means of publicizing the beauty, convenience, comfort and sanitation of the plumbing fixtures now being manufactured, in such manner as to create in the mind of the prospect the desire to purchase and possess these goods for his own comfort and convenience in his own home. In this he is taking advantage of the natural desire to improve.

Cutthroat competition does not at all bother Mr. Picard. He has made a study of this for years and has concluded to let the "cheap Johns" go their way without viewing their activities with any alarm, while he maintains his consistent practice of turning out quality workmanship and materials. Nevertheless, he carries merchandise priced to meet every pocketbook. "After ail," he points out, "when your goods are displayed to the greatest possible advantage, one of the strongest selling advantages of the d. t. u. is met and is offset."



Starbuck Reviews Venting Practice,

40 Different Elevations

The objective, in the design to obtain adequate venting most economical piping layout.

By R. M. Starbuck

In two previous articles, appearing in the November and December issues of Domestic Engineering, we have considered the subject of venting as applied to dwellings. In these articles the subject was presented as it was worked out by the Hoover commission on plumbing. To our way of thinking, the subject of venting was for the first time worked out on a scientific basis through the research and experimentation undertaken by this commission. In this present article we shall complete the consideration of this subject.

We have already seen that the subject under investigation,—the plumbing for dwellings, was divided into twelve types. Types 1, 2, 3 and 4 covered one-story one-family houses; types 5, 6, 7 and 8 covered two-story one-family houses, and types 9, 10, 11 and 12, two-story two-family houses.

In addition to determining what might be called the twelve standard types, eight different typical layouts or groupings of fixtures commonly found in dwellings were determined, and these were called designs,—designs A, B, C, D, E, F, G and H. It will be seen that when these eight designs were applied to the twelve types, a great variety of combinations resulted, out of which the writer has produced forty combinations which seem to him of most importance.

In the preceding article we showed nineteen of the forty combinations, under types 1, 2, 3, 4 and 5. In this article we show twenty-one, under types 6, 7, 8, 9, 10, 11 and 12.

The layout in the type 6 elevations seen in Figs. 1, 2 and 3 shows a bathroom on the second floor, kitchen sink and toilet room on the first floor, and water closet and laundry tubs in the basement. A chief difference between the three layouts relates to the bath rooms, which in Fig. 1 is design B, in Fig. 2 design D and in Fig. 3 design A. For the reader's information, the several typical designs, as they were called in the Hoover report summations, were shown in the eight detail elevations seen in the two illustrations on pages 74 and 75 of the November issue of Domestic Engineering. In those illustrations, Fig. 1 represented design A, Fig. 2 design B, and so on.

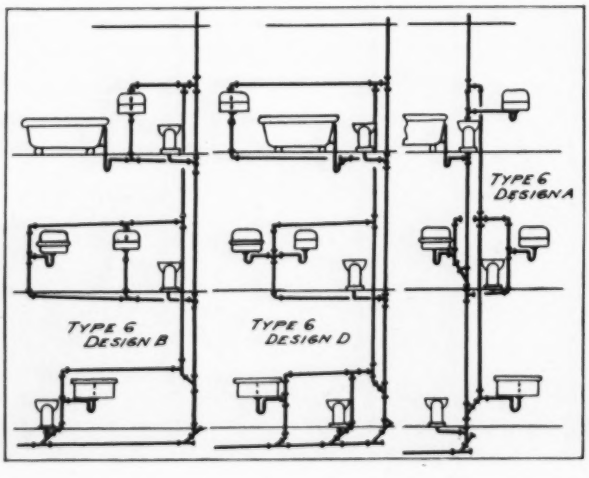


Fig. 1—(Design B); Fig. 2, (Design E) and Fig. 3, (Design A); typical elevations of plumbing systems for two-story, one-family houses having a single stack

OBJECT IS TO OBTAIN ADEQUATE VENTING

The chief point perhaps, in all these layouts, is the endeavor to obtain adequate venting for each fixture, with the least outlay. In Fig. 3, for instance, each one of the three bathroom fixtures is perfectly vented by the stack itself. Each of these fixtures is said to be stack-vented, and when stack venting is done properly it is considered that there is no form of vent that can excel it in efficiency and in economy of cost.

Stack venting can generally be done only in the case of a top-floor fixture located close to the stack. It could not be done for any first floor fixture in any of these three layouts, no matter how closely located to the stack, for passage down the stack of waste from fixtures above, would prevent use of the stack at such a point, as a vent pipe.

In many of the typical Hoover layouts of plumbing installations, use of wet vents will be noted.

This particular practice probably has called forth more criticism than any other practice advocated in the Hoover report. Many readers will accept use of the wet vent as shown in these elevations, and many others will reject it. Sometimes adherence to one side or the other of

Are Covered

of plumbing installations is for each fixture with the These drawings typify this

such a question as the wet vent, comes from preconceived ideas on the subject, or from earlier training or from some other similar bias. In our own mind use of wet vent should be determined by surrounding conditions. For instance, in the case of the wet venting of the water closet on the first floor in Fig. 3, the connection should be made 2 in. without question, even though it is a lavatory that makes the wet vent. We would accept such a wet vent in connection with a lavatory, whereas we would reject it in the case of the kitchen sink. There would be much more likelihood of collection of grease with partial or complete stoppage of the vent in the case of the sink than the lavatory. In Fig. 2 the wet vent for the first floor water closet receives the waste from two fixtures, one of which is the kitchen sink. While use of 2 in. pipe on this vent will doubtless avoid danger of stoppage, this type of wet vent is much more open to criticism than such a vent receiving the waste from a bathroom fixture. Our own opinion is the wet vent is safest in connection with bathroom fixtures, and not so acceptable when used with kitchen sink.

Figs. 4, 5 and 6 cover two-story one-family houses where there are no fixtures in the basement; Figs. 7, 8 and 9 cover the same class of house, but with fixtures in the basement. In all six of these layouts, two stacks are in use.

The double bathrooms on the top floor do not add complexity to the venting problem, as the work in each bathroom is a duplicate of the other. Here again wet vents are considerably in evidence.

We have stated previously that our opinion is against use of the wet vent when waste from the kitchen sink flows through the vent. A conspicuous instance of this practice is seen in Fig. 7, where the kitchen sink wet vents the laundry tubs. This elevation is to be found in the Hoover report.

Figs. 10, 11 and 12 take up the subject of two-story, two-family houses, where there is one stack only and no plumbing fixtures in the basement.

The extent to which simplified venting can be carried under intelligent planning is very well illustrated in Fig. 10. Here there are eight fixtures, and each one is vented effectually, but to gain this desired result only one of the eight fixtures has to be vented individually. This particular fixture is the lavatory in the first floor bathroom. By grouping the four top-floor fixtures closely around

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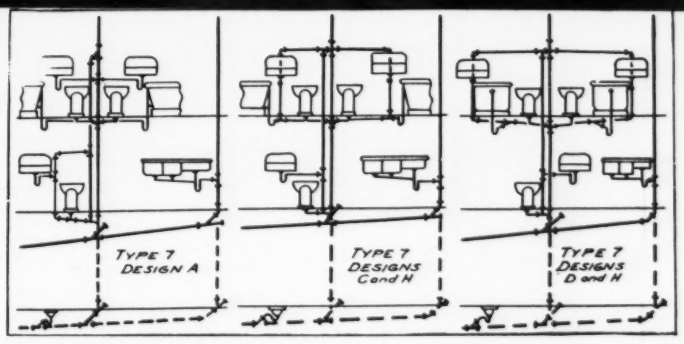


Fig. 4 (Design A); Fig. 5 (Designs C and H); Fig. 6 (Designs D and H)

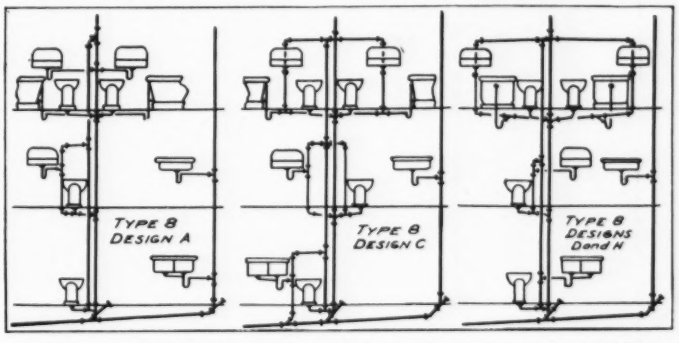


Fig. 7 (Design A); Fig. 8 (Design C); and Fig. 9 (Designs D and H)

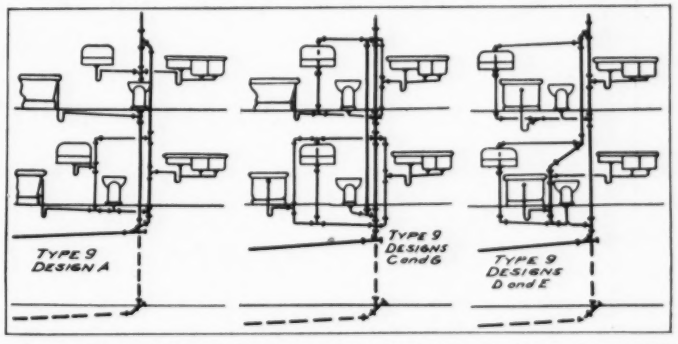


Fig. 10 (Design A); Fig. 11 (Designs C and G); Fig. 12 (Designs D and E)

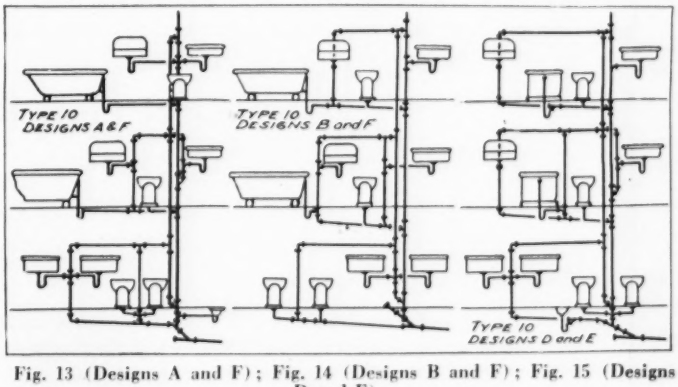
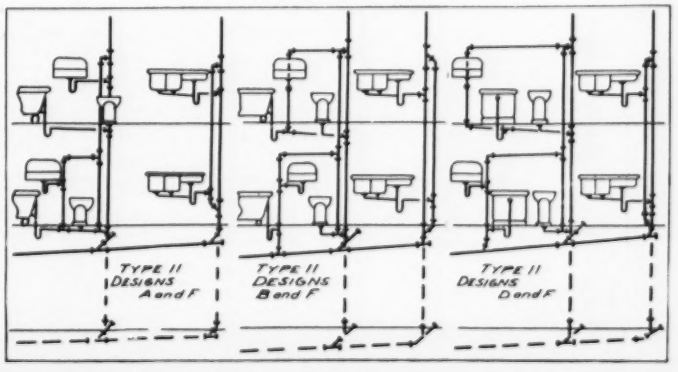


Fig. 13 (Designs A and F); Fig. 14 (Designs B and F); Fig. 15 (Designs D and E)

Below, Fig. 16 (Designs A and F); Fig. 17 (Designs B and F); Fig. 18 (Designs D and F)



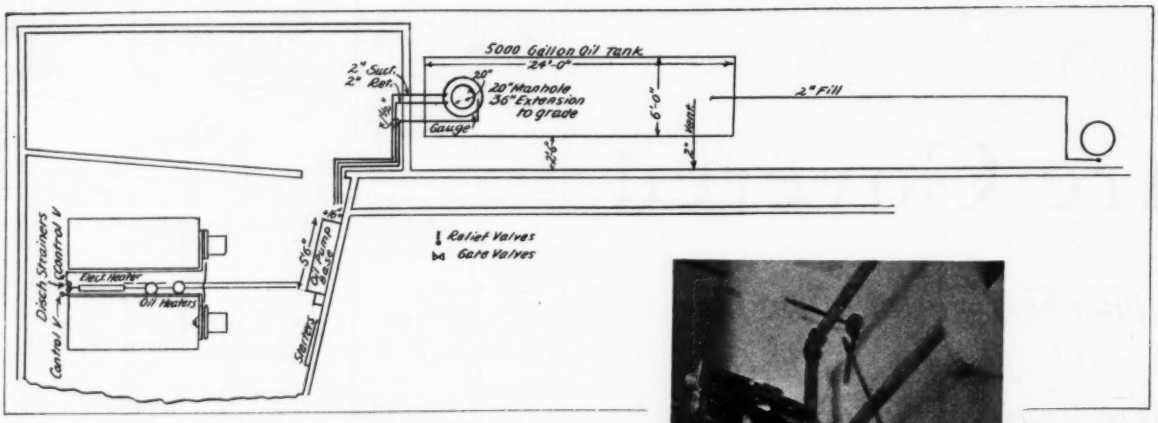


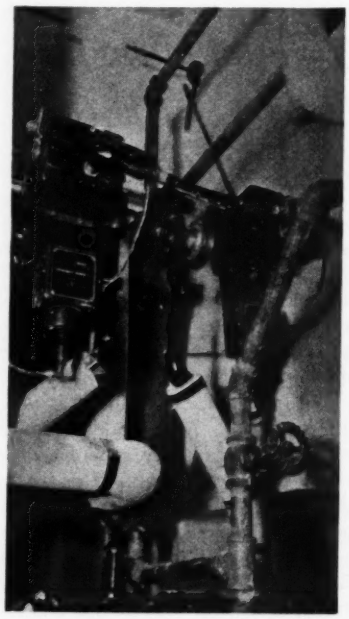
Illustration shows general layout of heating installation and the relation of the accessory equipment to the heating plant itself

Controls

Boiler and burner controls for an oil burning job in a theater.....

By

PAUL R. UNGER



Detail view of portion of the controls found at the rear of the boilers

THERE are four factors essential to the successful and efficient operation of any oil burning system:

(1) The selection of the proper grade of fuel to be used.

(2) The correct design of the control system adapted to the plant in question so as to satisfy the fluctuating or constant demands for steam, as the case may be.

(3) The provision of a complete oil burning system suitable for operation with the grade of fuel selected under the type of control selected for it.

(4) The assurance of complete safety under any conditions by means of adequate safety controls.

These four factors were the basis for the design and layout of the oil burning system at the New Beverly Theater just recently constructed in Chicago. Each of these factors will be discussed in this article.

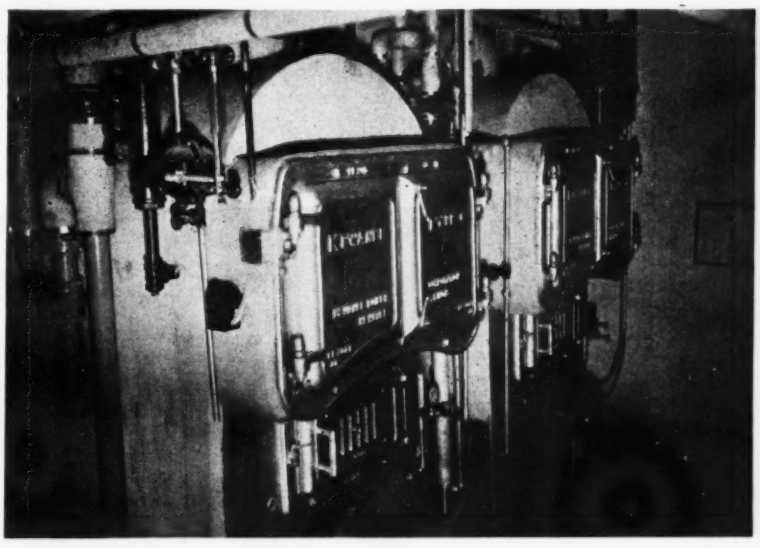
There are available for tank truck delivery in Chicago six grades of fuel oil of the heat content and approximate price per gallon listed in the following table:

Fuel No.	Average heat content per gallon	Aproximate price per gallon
1	137,400 Btu	$.07
2	139,600 Btu	.07
3	141,800 Btu	.06
4	145,100 Btu	.06
5	148,800 Btu	.0475
6	152,400 Btu	.0425

Looking at this table without other information it would appear advantageous to burn No. 6 oil for all oil-burning installations, as the heat content per gallon is the greatest and the cost is the lowest. Fuels No. 1, 2, and 3 are very light and are free flowing at all ordinary temperatures and therefore can be used with a very modest investment on the part of the purchaser. No. 4 oil, although somewhat heavier than No. 3, is finding a waning use because, while requiring heavier pumps and a more expensive type of burner than that used for the three oils above mentioned, the price per gallon is the same as No. 3. It is retained as one of the classifications of fuel oils because of the number of present installations designed for its use. No. 5 oil, generally known as 18-20 degrees Baume, is the most widely used of all fuel oils for commercial boiler plants with a heating load larger than two or three thousand square feet of radiation. This oil can be burned cold but due to its viscosity, generally it burns more efficiently when preheaters are employed.

No. 6 oil which has a considerably higher viscosity than any of the other fuel oils, must not only be heated before being burned but must be kept warm enough in the storage tank to facilitate pumping the oil from the tank to the burners.

Thus it can be seen readily that the cheaper the fuel the more expensive is the equipment necessary to burn it efficiently. Of course, the saving in the price of fuel, and other factors, when used for industrial or commercial purposes, in most cases, warrants the increased cost of equipment. Whether or not a saving may be effected can be ascertained by computing the decreased cost and increased heat content of the number of gallons of oil to be burned over a given period of time and balancing this against the difference in equipment cost for the same period, allowing a customary depreciation period.



Front view of two boilers installed to take care of the heating requirements of the theater. After the job was finished it was painted and left in good condition

It was after a careful analysis of this kind that it was decided to use No. 6 oil at the Beverly Theater. Once having arrived at this decision, it became necessary to choose a method of controlling the oil burners so as to handle this fuel satisfactorily.

In designing the control system for a theater or any public building requiring ventilation, a control problem different than that ordinarily encountered presents itself. As long as heat is required in any amount, constant steam pressure must be maintained in order to prevent blowing cold air into the theater to the consequent discomfort of the patrons. In a building not ventilated in this manner, burners could be operated at off-and-on periods of an hour or longer without any noticeable cold air currents.

It was possible to have operated the burners manually but in a theater the frequent attention of the engineers would be required to change the size of the fire to correspond with the changes in weather and to compensate for the heat given off by the varying number of people in the theater.

The burners could have been operated intermittently with automatic ignition to turn them on and off at predetermined steam pressures. These pressures could be set so that the system would operate satisfactorily at any point between these limits. This would mean frequent starting and stopping of the equipment which in this case, it was decided would cause what was considered to be a deleterious effect on the refactory material due to constant expansion and contraction. The principal objection, however, was decided to be that the frequent starting and stopping of the equipment would result in decreased efficiency of operation due to the fact that the oil burner would function in a cold fire box for a large percentage of the time. It was reasoned that just about the time the fire box gets hot and the equipment is operating at its peak of efficiency, the high pressure limit would be reached and the burner would stop. After the burner would stop, some cold air still would be drawn through the fire box and up the chimney, thus cooling the brick work and completely wasting valuable heat units.

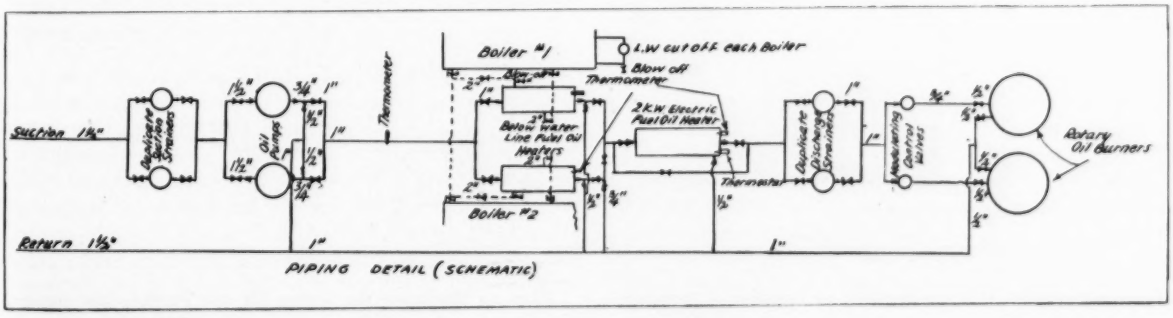
Another possible method of control which was considered is the so-called high-low control system in which the burner would operate at two sizes of fire, dropping from a maximum fire at one pressure to a minimum fire at another and vice versa.

Still another method of control considered for this job was that of connecting the oil valve on the burner and the secondary air damper to a boiler sylphon to maintain boiler pressure.

The method of control finally selected for this theater building is described in detail in the following.

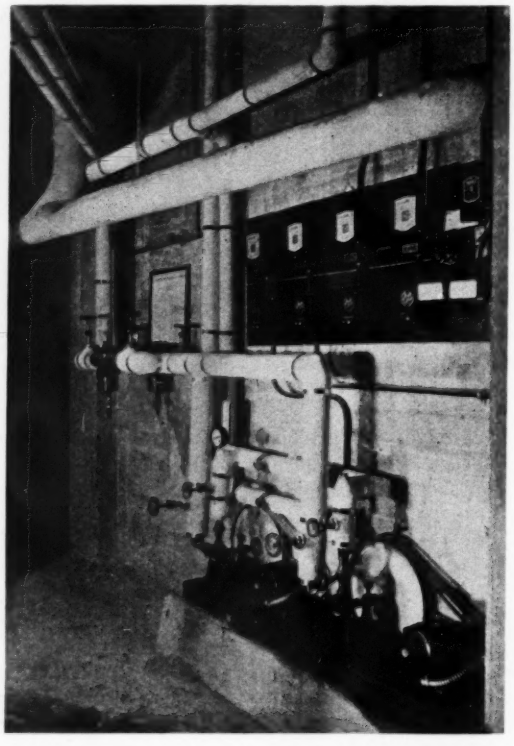
The boiler plant of the Beverly Theater consists of

Below is a diagrammatic sketch of the oil piping and control features. Note the provisions for bypassing and duplicate services



two portable type boilers with an oil rating of approximately 7200 sq. ft. of radiation, each. The boiler plant is sized so that except in cases of extremely cold weather, one boiler will carry the entire load. The oil burning equipment for each boiler has a capacity of 150 per cent of boiler rating. The oil burners are of the horizontal rotary type. As shown in the accompanying drawing, a 5,000 gallon oil tank, 6 ft. in diameter by 24 ft. long, is buried under an area-way, 2½ ft. below grade just west of the building. This size tank was selected to provide ample fuel oil storage capacity, making it necessary to fill the tank only six or seven times a year. The 2 in. fill line terminates at the alley with a lock type fill cap. The 2 in. vent line rises on the building wall to a point 8 ft. above grade and ends with a double turned down nickel mesh screen. An additional 2 in. line is provided, with a flush cap directly above the tank at grade, for poling or pumping the tank. The tank is equipped with a 20 in. bolted manhole.

Adjacent to and around the manhole are three additional openings, suction, return and gauge lines, which are grouped in this manner so that the concrete extension over the manhole to grade includes not only the manhole but also the suction, return and gauge line fittings. The purpose was to make these readily accessible also. Suction and return lines both are extended to a point 6 in. from the bottom of the tank and are as close together as possible so that the warm oil returned from the preheating system, to be discussed later, will be as close as possible to the suction stub, making it unnecessary to heat the entire tank of oil. Concrete saddles are provided on top of the tank, bearing against the concrete driveway under which the tank is buried, to prevent the tank from floating when empty of oil. The underground suction and return lines are wrapped together in hair felt and tar paper and bound with copper wire. A check valve is provided where the suction line enters the boiler room. This distance is very short as the suction openings and manhole are placed at an end of the tank which is a distance of only 2 ft. from the boiler room wall.



View of the oil pumps, piping, and control switches mounted on boiler room wall. These are shown in sketch

Fuel oil pumps are provided, in duplicate, either pump being of sufficient capacity to care for both burners under maximum load conditions. Each pump is driven by a ½ h.p. 1750 r.p.m. motor with a V-belt drive to reduce the speed of the pump to 300 r.p.m. to facilitate the pumping of the heavy oil. On the suction side of the oil pumps are two 1½ in. basket type strainers with $\frac{3}{32}$ in. mesh screens. These strainers are provided with four valves so arranged that the oil may be shifted from one strainer to the other in order that the strainers may be cleaned without the necessity of turning off the burners. Each pump is equipped with an emergency non-adjustable relief valve between the pump and its nearest valve. Two below-the-water-line type, oil preheaters are located between the two boilers, cross-connected so that either heater can take water from either or both boilers. The heaters are arranged so that the fuel oil leaving the oil pump divides, an adjustable relief valve sending part of the oil, actually to be burned, through one heater to maintain a constant oil pressure ahead of the control system and returning the balance through the second heater to the return line to provide warm oil in the storage tank. Piping is laid out so that either heater may be valved off for cleaning, or removed for repair, without a shut down. The remaining heater warms the oil which is delivered to the burners and also warms that which is returned to the storage tank.

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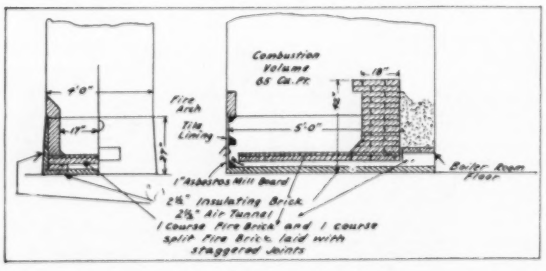


Cross section detail of construction of combustion chamber

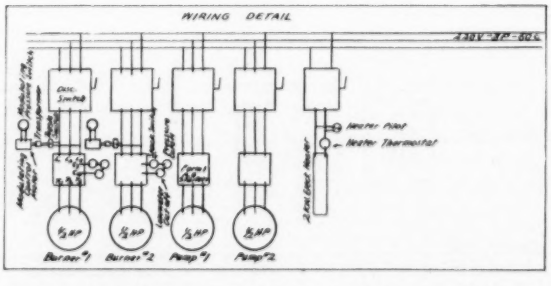


Diagram illustrates the wiring for the burners and pumps

Merchandising Counsel

This service is offered without charge to readers of DOMESTIC ENGINEERING.....Readers, from time to time, submit their merchandising problems to us and we are ready at all times to suggest copy ideas, layouts, etc. Write the Merchandising Counsellor about your advertising and merchandising problems. They will be given prompt attention. The material described may be had for the asking.

A RECENT request brought to mind something we had almost forgotten; and that is the need which members of the industry occasionally have for material to be used in an address before various civic organizations such as the chamber of commerce, Rotary club, Kiwanis club, Lions club, etc.

To many, the need for the preparation of such a talk comes as a difficult task because of the pressure of the day's business. However, the request referred to brought to mind an interesting bit of material of this kind which was prepared sometime ago and has been used very effectively.

Obviously, when a business man gives his time to this kind of an address, he must first be entertaining. If, in addition to entertaining his audience, he can do a good job of merchandising the services he offers in so skillful a way that his hearers are not aware of what he is doing, he will have succeeded in making the investment of his time and effort worth while.

The little talk to which we refer, was designed to take about fifteen minutes. There are not many of the services or the products which the master plumber has to offer that are not touched upon in this talk. Yet they are brought in with just enough humor so that the entertainment value is never lost sight of. When the master plumber has completed his talk, his hearers will have absorbed a very complete merchandising message of just what the master plumber offers them in the way of services and products for their health and convenience.

This talk also makes use of some of the material in "The Story of the Bath" that popular little booklet which has, for close to fifteen years, been a favorite piece of literature in the plumbing industry. Taken together, the fifteen-minute address and the booklet will tend very greatly to fix firmly in the minds of those who attend the meeting addressed by a master plumber, the importance of his services to the community.

And now let us go back to the problem taken up by the Merchandising Counsellor in our November issue: How is the plumbing and heating contractor to meet

effectively the competition of the direct to you houses and the mail order houses?

In our December issue we reproduced an advertisement used by one of our readers which he had taken from our pages. This was one of two suggested advertisements and the headline on that particular one was "Do you get what you pay for—or less?"

Another advertisement along the same lines was headlined:

"Why pay more?"
Answer: "You don't."

These ads of course attack the subject from the general angle of quality and of the continuing service of the master plumber who is a part of his community and who will be in business to render service in the future on any products, he installs in the present.

But there is an even more definite way of merchandising the only thing which the independent master plumber has to offer his community. That thing is of course his license as evidence that he is qualified to practice his calling and to fulfill the requirements which won for the craft the slogan: "A plumber protects the health of the nation."

The master plumber's license is the official recognition of his community that he is a qualified student and practitioner of sanitation. It certifies that each year he continues and grows in the skill which won him his license. It should rate with the diploma which hangs in the office of the doctor and the dentist. If properly merchandised, it will.

The obvious and attractive thing to do is to merchandise the license by number, as is done in the advertisements in these pages. That gives the average householder or property owner something to fasten his mind upon a little bit more definitely than the mere idea of the license itself hanging in the office of the master plumber. The number itself has no significance of course, since it may change from year to year. It is only by displaying the number the newspaper reader is able to grasp the fact of the license a little more easily.

PLUMBING LICENSE No. 0000

What does it mean?

It means that (Your Name) has been found duly qualified to practice plumbing in (Your City). It means that (Your Name) has spent the required number of years learning the principles and the practice of sanitation. It means that (Your Name) has kept himself posted on the latest developments in plumbing practice during the past year.

And all that means that too many years of study and experience have won the right to display that License for (Your Name) to believe in anything but quality products and service—which is to your advantage when you order plumbing work done.

***My* Plumbing License is No. 0000**

Long ago, the City Fathers set down a code of plumbing practice. They said that any man who was to hold a license to practice plumbing must prove himself capable of living up to the standards of that code, for the protection of the health of the community. The license has to be renewed every year, so that a man has to keep himself up-to-date on plumbing practice.

The value to you as a property owner is obvious—a plumbing license is a sign of professional competence.

Two newspaper advertisements that use the master plumber's license as a selling point

As is always true of advertising, this sort of effort should be carried through for a period of time in connection with any advertising being done by the master plumber. For example, if he is using space in the newspaper, he will be merchandising his license in that way. If, during that month, he is making a direct mailing of any kind involving a letter, the main selling idea in the letter should center around his status as a licensed master plumber. If he has blotters printed for use during that period, or any kind of envelope enclosure, these should also play their part in repeating the story of the license and what it means to the home or property owner.

Stewart McDonald, Administrator
Federal Housing Administration

Congress is in session . . . Title I of National Housing Act expires on April 1st . . . Write to your Congressmen and Senators that

Title I Should be Continued

IN the last issue of DOMESTIC ENGINEERING evidence was given of the degree to which editors and publishers of business papers were in agreement on the need for continuing Title I of the National Housing Act beyond the date now set for its expiration, which is April 1, 1936. This section of the Act is the one under which the modernization work has been financed.

All of those who have expressed the opinion that Title I should be continued have arrived at this conclusion because it has resulted in the financing of modernization work to a very considerable sum with private money. It is agreed on all sides that to bring private money into investment channels, particularly in the building construction field, will be the most effective means towards the return of greater employment and a greater measure of prosperity.

Business paper editors have united back of DOMESTIC ENGINEERING'S move to have Title I continued and in every branch of the building industry the benefits of this portion of the National Housing Act have been called to the attention of the men in those fields by the business papers serving them. They have been urged, as we have urged our own readers, to write to their representatives in Congress to make certain that nothing intervenes to bring a stop to the activities under Title I. Later in this article we will review the steps to be taken.

Meanwhile we quote below the statement made exclusively for DOMESTIC ENGINEERING by Stewart McDonald, Federal Housing Administrator:

"Field reports and statistical sources indicate the total amount of modernization and repair work done in the United States since the inauguration of the Federal Housing Administration program in the summer of 1934 is approximately one billion, one hundred and fifty million dollars ($1,150,000,000).

"Uninsured modernization financing runs about five times the amount of insured financing. The Housing Administration has insured, as of December 17, a total of $242,246,689 representing 671,559 separate modernization and repair notes made by private financial institutions.

"This volume of work has been accomplished only through the enthusiastic and intelligent cooperation of leaders in civic, banking, commercial and industrial fields.

"This cooperation has centered largely in the national trade and industrial organizations and in the thousands of local committees organized to work definitely and directly with the program of the Federal Housing Administration.

"The modernization phase of the Federal Housing Administration's program has been twofold:

"1. To educate the entire American public to the necessity of modernizing all types of property in order to protect the investment and to make the property itself more serviceable. 2. To enable banks and other private financial institutions to lend money safely for modernization purposes under the provisions of the National Housing Act.

"Institutions making insured loans are guaranteed against loss up to 20 per cent of the total loans they extend under the National Housing Act. Defaults to date have been around fourteen hundredths of one per cent—a most encouraging percentage.

"Much of the uninsured money has been provided by financial institutions, encouraged by the very favorable experience of those institutions making insured loans.

"The remainder came out of the pockets and cash reserves of the people themselves. They had the money; they gained confidence in the future and in their real estate investments when they began to see the beneficial results of property modernization all around them.

"Another encouraging sign is the fact that all this money, insured and uninsured, is private capital, brought out from hiding and put back to constructive work. Also, while all properties are eligible for improvement under the Modernization Credit Plan, 92.3 per cent of the number of insured loans and 82.8 per cent of the total amount have been for home modernization. This money went toward making the average American home more livable, more attractive and easier to maintain. DOMESTIC ENGINEERING had an important part in these achievements.

"Although the home equipment industries have benefited largely from modernization, I cannot help mentioning the fact that under the single mortgage system established by the Federal Housing Administration, they probably will benefit more. A strong revival of greatly needed home building has got under way in the past year, stimulated by this method of home financing. And when a new home is built, every business connected with home furnishing and equipment benefits.

"Up to December 12, there had been 62,815 home mortgages totaling $242,422,492 selected for appraisal with fees paid. Fifteen mortgages totaling $27,030,234—low cost housing projects—all new construction financed by private capital—were accepted for insurance.

"Thus the total volume of loans insured by or presented for insurance to the Federal Housing Administration is now well over half a billion dollars. This also is all private capital, advanced by banks, insurance companies, finance companies, building and loan associations, etc. It is no small sum in itself but is actually a small part of the benefits derived by the American people from the entire program.

"One of the purposes of the President and the Congress in framing the National Housing Act and establishing the Federal Housing Administration was to revive the heavy industries and building activity. Much progress has been made in this direction, as shown by the figures quoted, and much greater progress should be made in the coming year.

"The cooperation of the leaders in DOMESTIC ENGINEERING's field has helped greatly in the past year and a half. It can continue to help materially in the coming year."

Here then is ample evidence of what this, the most effective of the Administration measures, has done in stimulating business in the building field. Since all of this business has been paid for out of private funds, and equally since only about 1/6 of all the modernization building undertaken as a result of these activities has been insured under the provisions of the Act, there seems no good reason why every man in the building industry should not get back of this movement to assure the continuance of sound, constructive stimulation of business.

As we suggested to our readers in our November issue, each man should appoint himself a committee of one. In this article is reproduced a form letter to be copied out on the letterhead of the reader and sent to each of his representatives and senators in Washington.

In addition to this we suggest that our readers make contact with their friends in other branches of the building industry. Remember that these men are being urged to act by their business papers. It is possible, therefore, in addition to the individual letters to be written by our own readers, there can be in every community an organized effort on the part of all of those interested in the building and home furnishing fields, to send a message to these same representatives and senators. Such a message, expressing the united opinion of a group of business men in their community, will bear a great deal of weight.

In addition to this it should be possible to secure letters from local city officials, from officers of civic clubs like the Lions, Rotarians, Kiwanians, etc.

1936 will be an election year and therefore, men in public office will be more aware of what the people back home are saying and thinking and will be more alert in complying with the wishes of their various constituents.

(Continued on Page 90)

My dear Mr.....

From my knowledge of what FHA has meant to my own business, and what it has meant to the building industry in general, and from talks with scores of other business men in my community, I am convinced that this FHA program is one that should be continued beyond the date now set for its expiration.

I write you, therefore, to urge that when the matter is before you in the present session of Congress, you not only vote in favor of the continuance of FHA, but that you speak as persuasively as possible in uniting the other members of Congress with you.

We are all agreed that the building industry is one of the key industries of the country, and that its prosperity or lack of it has a powerful effect on the general business tone of the nation. Because FHA has stimulated business, and particularly because it has brought private funds into circulation and made work for thousands in the industry, I am of the opinion that the program should be continued.

I shall very much appreciate having a reply from you, giving me the assurance that you will do all in your power to continue FHA beyond April 1st, 1936.

Yours very sincerely,

Copy this letter out on your letterhead and send it to each of your Representatives and Senators at Washington

Automatic Controls..

In this 18th article of his series on air conditioning, Harold L. Alt gives the basic facts governing the application of automatic controls to the various types of systems generally encountered

THE air conditioning system is useless without the application of proper automatic controls. This is because of the varying outside temperature and humidity combined with alterations in the cooling demand which may occur inside of the building. It has been shown that the temperature inside of the building cannot be held at any fixed point and the outside maximum of 80 deg. Fahr. and 50 per cent relative humidity assumed for the purpose of calculation is only the worst condition—a condition obtained perhaps only a few times in the whole cooling season, just as the minimum outside temperature for which a heating system is designed may be reached only a few times in an entire winter.

There are many methods and ways of applying automatic control and some of the automatic installations are quite complex. Often the automatic control manufacturers will make a study of some particular installation to find ways and means of getting the control desired without excessive complication. Consultation with control manufacturers is urged in all cases beyond the very simplest equipment.

While the capacity of any cooling system must be sufficient to take care of the worst case, for usual conditions of outside temperature and humidity something considerably less will do. For example, the inside temperature will be dropped as the outside temperature falls, but not as rapidly as the fall on the outside. When the outside temperature has dropped from 95 deg. Fahr. to 70 deg. Fahr. the inside temperature should only be reduced from 80 deg. Fahr. to 72 deg. Fahr. In Table I suggestions are offered as to the inside temperatures, wet bulb, and effective temperatures to be held for varying outside temperatures from 95 deg. Fahr. down to 70 deg. Fahr. Below 70 deg. Fahr. most owners will shut off the conditioning system feeling that its operation is unnecessary.

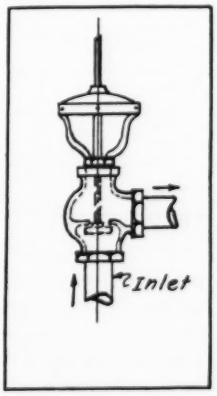


Fig. 1—General diagram of a reverse action thermostatic valve control

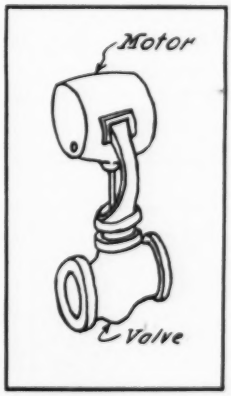


Fig. 2—Sketch shows typical features of a motorized valve control unit

WHAT IS THERMOSTAT?

A thermostat may be defined as an instrument actuated by temperature and having this action transferred to some medium which in turn transmits the action to the point where it is desired to exert some kind of control on the flow of air, water, steam, etc. There are two general systems of control in common use; the older compressed air or "pneumatic" control, and the newer electric control.

PNEUMATIC CONTROL

In the pneumatic system the following general features are present:

Air is compressed by a small air compressor and is delivered into a small storage tank where it is stored under about 20 lb. pressure. Pipes are carried from this tank to all thermostats where a small valve is actuated by the movement of the thermostat so as to let the air pass through the thermostat when the thermostat is "hot," or the room above the temperature for which the thermostat is set, this air being carried to a diaphragm operated valve and admitted on top of the diaphragm or bellows. Under the bellows is a spring which will open the valve as soon as the air pressure is released. When the thermostat is cold, it closes off the supply of compressed air to the valve and opens a small port to allow the air on top of the diaphragm to escape. Then the spring promptly opens the valve. A valve which opens when air pressure is applied to the diaphragm is called a "reverse action" thermostatic

valve when considered with systems in this connection.

In the operation of dampers an air motor is substituted for the diaphragm valve, this motor having a similar diaphragm and spring and moving a lever arm attached to the damper instead of a valve spindle. Fig. 1 illustrates a typical reverse action diaphragm valve.

In the pneumatic system two types of thermostats are in use: the *positive* thermostat, which completely opens or closes the valve or air motor to which it is connected; and the *graduated* type, which opens and closes the valve or air motor in graduations so that it may be held in an intermediate position and assume a position of balance when the conditions are constant.

PNEUMATIC CONTROL WITH STEP ACTION

Pneumatic systems also utilize a single thermostat to control a series of valves by what is called "step action"; this is accomplished by using springs in the different valves requiring different air pressures to close the valves. For example, with four radiators in a room the diaphragm valves might be set with springs for 5 lb., 10 lb., 15 lb., and 20 lb. Then, when the thermostat lets air into the line to the diaphragms so that the pressure rises in the line to 5 lb., the first valve would open; with a further rise in room temperature, air pressure would be increased until 10 lb. was reached, at which time the second valve would open. When 15 lb. was reached, the third valve would open and when the full 20 lb. was on, all of the radiators would have their valves open and would be hot. (See Fig. 3.)

ELECTRIC CONTROLS

Electric control systems largely parallel the pneumatic systems in their arrangement of having a thermostat, valves and damper operators, but they employ electric thermostats which are connected by electric wiring to motorized valves (see Fig. 2) and to electric motors operating the dampers. There also are the same two kinds of thermostats, the positive acting, which entirely closes or entirely opens when it acts, and the graduated (which is termed "potentiometer") which operates in a manner similar to the graduated thermostats of the

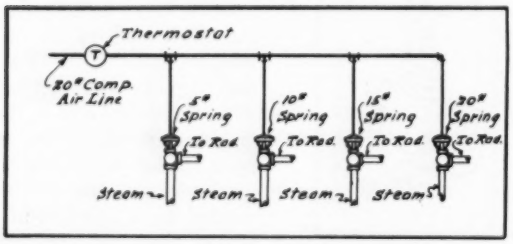


Fig. 3—Diagrammatic sketch indicating general features of a spring action type of temperature control system

pneumatic system as far as holding the valves or dampers in intermediate positions is concerned.

In order to make automatic control as easy to understand as possible it will be wise to consider the simplest type and gradually build up to the more complex.

In the winter conditioning system without recirculation is presented the old type of "ventilation system" having an air washer for humidifying. This type of central system employed a preheater, and a reheater, with the air washer between and the fan on the end, the whole apparatus being arranged in the "draw-through" manner as indicated in Fig. 4. The preheater is arranged in two rows and the first row is controlled by a valve in the steam supply line, which valve in turn is controlled by a thermostat in the outside air intake so as to turn on this heater whenever the outside temperature approaches freezing (usually at 35 deg. Fahr.). The second row of the preheater is controlled from a thermostat in the outlet of the air washer so as to give whatever delivery air temperature from the washer is desired.

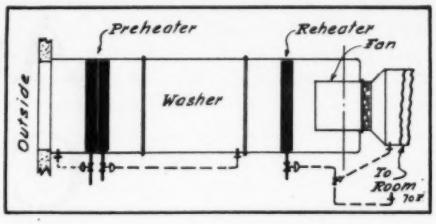


Fig. 4 — Above, Control for winter system without recirculation

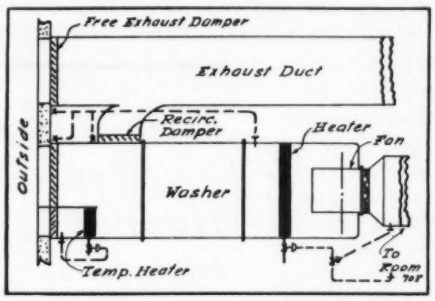
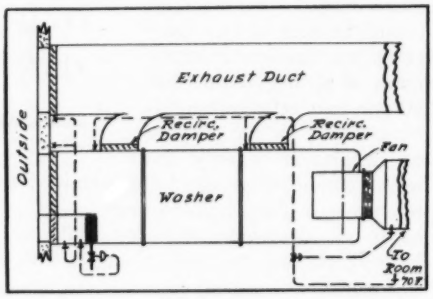


Fig. 5—Left, control with recirculation but without bypassing

Fig. 6 — Right, control for recirculation and bypassing



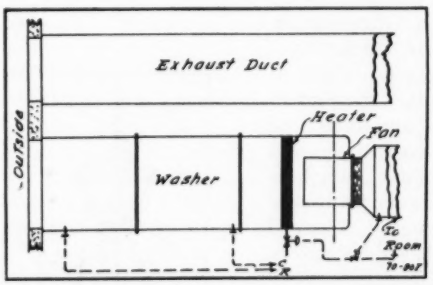


Fig. 7—Left, automatic control for summer system without recirculation

The reheater is controlled from a thermostat located in the room or in the discharge duct of the fan. If this heater is controlled from the room, the air temperature going to the room will vary and if the room ever becomes overheated, the reheater may be shut down and 45 deg. Fahr. or 50 deg. Fahr. air direct from the air washer supplied without reheating. In such cases it is desirable to use a limiting thermostat set in the fan discharge duct so that the air going to the room will never be reduced to below 60 deg. Fahr. This is done by the duct thermostat cutting off the action of the room thermostat whenever the supply air reaches 60 deg. Fahr. by closing a small reverse action valve in the compressed air line from the room thermostat, thus preventing the room thermostat from entirely cutting off the heater. If the reheater is controlled by a thermostat located in the fan discharge, it is customary to set this duct thermostat at 70 deg. Fahr. and let the radiators in the room assume the necessary variation in heat supply to keep the room at proper temperature. In other words, it requires a "split" system with the air supplied for "ventilation" or air conditioning results only, and with the actual heating done by radiators.

Sometimes a small water heater is installed on the side of the air washer and heats the washer water so as to secure a higher humidity. Care must be taken in winter conditioning not to attempt too high a humidity on account of sweating and frost on the windows which will occur under this condition.

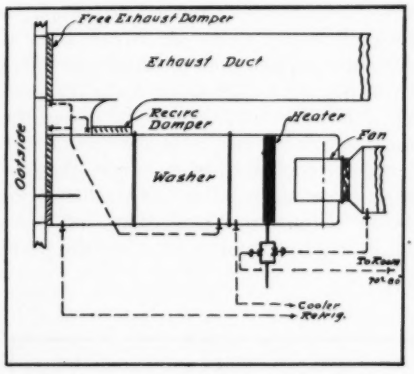


Fig. 8 — Control for summer with recirculation but without bypassing

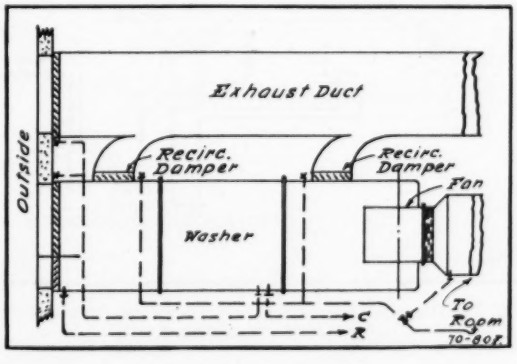


Fig. 9—Automatic control for summer system with recirculation and bypassing

A winter system with recirculation is much more economical to operate because:

a. Less than 100 per cent outside air is used.
b. Humidity in recirculated air lessens the moisture to be added to the outside air.

Such a system employs a preheater, an air washer, a reheater and a fan, usually being arranged in the draw-through style as shown in Fig. 5. In this case the damper on the outside air intake should be arranged in two parts, one of these parts (assuming 75 per cent recirculation) being 25 per cent of the total area and the other part 75 per cent of the total area. The total area is made sufficient to admit 100 per cent of the entire air supply. The recirculation duct has a capacity of 75 per cent of the total air supply, and the damper opening the free exhaust so the air is discharged from the building has the same capacity. The cross connection into the intake of the supply also has a capacity of 75 per cent of the total air supplied and the same may be said of the damper in this connection. With this arrangement it is possible to take in 25 per cent of outside air through the outside 25 per cent damper (which is always open unless the entire system is shut down), temper this air with the small tempering heater, and add 75 per cent recirculation to it through the cross connection from the recirculation duct, making the 100 per cent total air supply.

When the outside conditions become too warm to permit recirculation the damper in the cross connection begins to close and the 75 per cent damper in the outside air intake and the other 75 per cent damper in the recirculation discharge begins to open so that, if the temperature continues to rise, the apparatus soon is supplying 100 per cent outside air and is throwing away all of the recirculation air.

This is accomplished by using a graduated thermostat between the washer and reheater which simultaneously closes the cross connection damper and opens the other two dampers. Should the outside temperature fall, this same thermostat will close the two outside dampers and reopen the cross connection damper so that recirculation is again employed. If the outside conditions are such that only a part of the recirculation air can be reused, the dampers will take up an intermediate position and deliver the usable portion. The control on the preheater is exactly the same as explained under "winter system without recirculation," and the preheater may be sized for 25 per cent of the air quantity and of sufficient capacity to raise the outside air used up to 35 deg. Fahr. to avoid freezing the washer, although this danger is rather remote and sometimes this preheater is omitted altogether in milder climates.

WINTER SYSTEM WITH RECIRCULATION

This system is the same as the previous one where the washer is not bypassed except that no reheater is employed, the air bypassing the washer being depended upon for the reheating necessary and the dampers controlling the cross connections from the recirculation duct being set opposed to each other so that as one closes the other opens and vice versa. These dampers are controlled from the room thermostat with a 60 deg. Fahr. stop thermostat in the fan discharge to prevent less than 60 deg. Fahr. air if no split system is used, or with

a thermostat set in the fan discharge to maintain 70 deg. Fahr. air at all times if the split system is employed. The 75 per cent outside air damper and 75 per cent recirculation discharge damper are connected up in parallel and the recirculation damper in opposition, all three being operated by a thermostat in the outlet of the washer so that if at any time the washer air rises too high in temperature, more outside air and less recirculation will be utilized. (See Fig. 6.) The preheater is controlled by a thermostat in the outside air intake the same as before.

In this system, which seldom is employed owing to its lack of economy in operation, nothing is necessary but the washer supplied with cold water and a heater to heat the air after it has been cooled to the point where the absolute humidity is that desired. The thermostat in the washer outlet controls the refrigerant supply to the cooler, or operates a three-way valve which bypasses

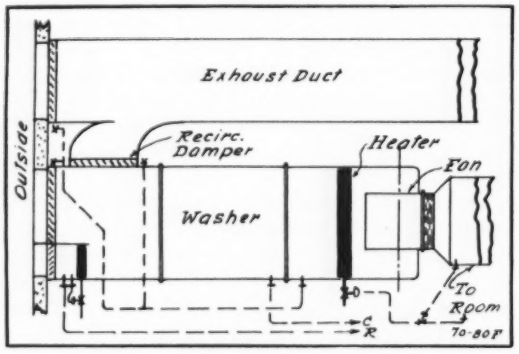


Fig. 10—Automatic control for year 'round system without bypassing

the washer water around the cooler to as great an extent as necessary. The compressor is stopped by a thermostat in the outside air intake when the outside becomes cool enough to perform the necessary cooling. The heater is controlled by a room thermostat with a 60 deg. Fahr. limit thermostat in the fan discharge to prevent air less than 60 deg. Fahr. going to the room; the outside air intake is 100 per cent and is always open unless the whole apparatus is shut down. (See Fig. 7)

This arrangement is illustrated in Fig. 8 and consists of the same equipment as shown in the previous set up without recirculation except that a 75 per cent recirculation duct is brought back and connected to the inlet of the washer and to the outside air. A 25-75 per cent damper is placed on the outside air intake, the 25 per cent portion always being open and the 75 per cent opening and closing in parallel with the recirculation discharge damper and opposed to the recirculating cross connection damper.

A thermostat is placed in the outside air so that whenever the outside is low enough in temperature to permit 100 per cent outside air to do the necessary cooling—usually this is at about 60 deg. Fahr.—the thermostat will close off the mechanical refrigeration. This will cause a rise in the discharge temperature of the washer so that the colder water will be called for from the cooler (which has been closed off and does not respond)

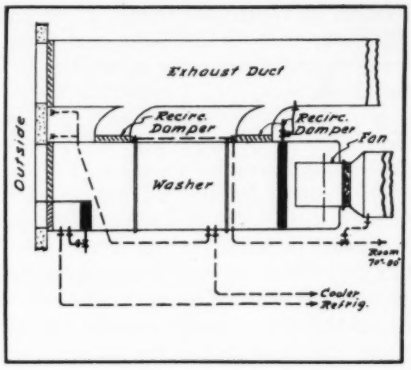


Fig. 11—Automatic control for year 'round system with recirculation and bypassing

and the damper in the 75 per cent outside air intake will open, the damper in the recirculation discharge will open, and the damper in the cross connection will close. The reheater, which is required when no washer bypass is installed, is controlled from the room thermostat with the usual 60 deg. Fahr. protection thermostat in the fan discharge duct.

The more customary arrangement for summer cooling is shown in Fig. 9 where the arrangement is quite similar to the previous case, except that the heater is eliminated and a recirculation connection is installed in its place, this connection being arranged to supply a portion of the recirculated air to the air stream after it has passed through the washer and to supply the necessary heat to warm the dehumidified air up to the temperature at which it is desired to deliver the air to the room. The two dampers in the cross connection are set in opposition and are controlled from a room thermostat so as to throw more air in after the washer when the room goes below temperature, and more and more recirculated air in in front of the washer when the room temperature rises.

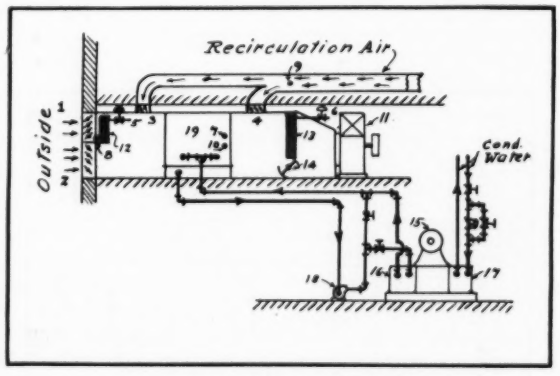


Fig. 12—Diagrammatic sketch here shows an automatic control system for a typical theater

These controls are protected against too cool air by the 60 deg. Fahr. protection thermostat in the discharge duct of the fan. The inlet and discharge dampers are controlled by an outside thermostat in the same manner

(Continued on Page 164)

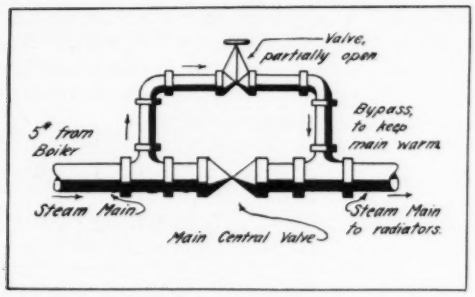
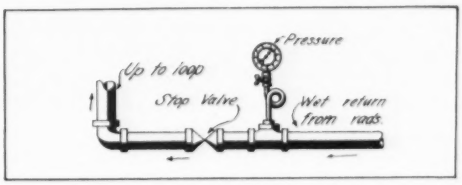


Fig. 1—Left, method of keeping lines hot so as to reduce any on-and-off control noise formed in the piping

Can Radiators and Units Be Mixed?



SEVERAL contractors recently have brought up the question of how to operate unit heaters, requiring pressure at 5 lb., from steam heating systems designed to run at very low pressures or which operate a portion of the time on negative pressures.

The purpose of this discussion is to consider the various types of heating systems such as

(a) Gravity one-pipe
(b) Vacuum
(c) Vapor
(d) Atmospheric

and to consider what will happen when one or more unit heaters are installed and supplied with steam from these systems. In each case it will be assumed that the steam pressure required by the units will be 5 lb. gauge.

In the case of the gravity one-pipe steam system the usual operating pressure is between 0 and 2 lb. gauge varying somewhat with the conditions of outside temperature and with the firing of the boiler. Normally such a system is supposed to operate with 1 lb. pressure in the radiator. Temperature control which is possible with such a system may be classified as follows:

(a) regulating the radiators or
(b) raising and lowering the steam pressure on the system through the control of the fire and burner.

Such an arrangement is illustrated in Fig. 3 where the ordinary one-pipe heating system is shown to the right of the boiler and unit heaters are shown as installed on the left of the boiler.

It is evident that, with no method of raising the steam pressure after it once has been generated in the boiler, it is essential to have the boiler generating steam at 5 lb. gauge if this is the pressure at which steam must be supplied to the unit heaters. It also is evident that the unit heaters cannot be supplied continuously with steam if the steam supply for the entire system is raised and lowered more or less constantly in order to avoid overheating.

On the other hand, if 5 lb. pressure constantly is carried on the whole system overheating is bound to result

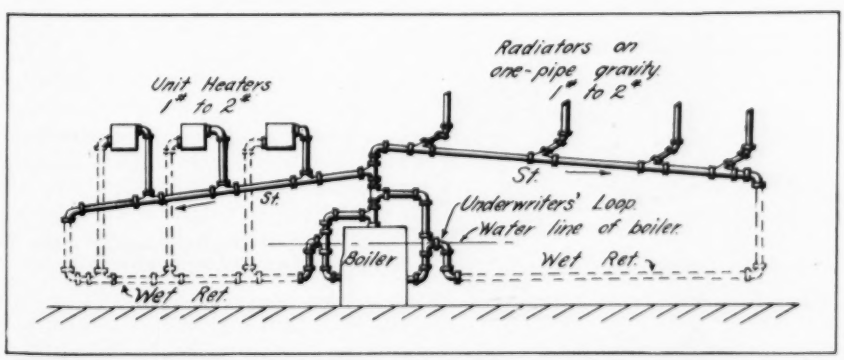


Fig. 2—Above, at right, is an indicated arrangement of pressure control and valve on return line

Fig. 3—At left is shown typical one-pipe gravity steam system which is combined with heaters

unless the radiator valves are operated to prevent an excessive amount of heat being delivered into the rooms via the radiators during periods of mild weather.

An alternative which presents itself seems to be the use of valves on the steam and return mains to the radiators and the turning on and off of these valves. This will result in the radiators receiving steam for longer or shorter periods (according to the outside temperature) and gives a temperature control similar to that previously secured by regulation of the steam boiler generating in the boiler, yet, it still leaves 5 lb. pressure on the units.

Two objectives may be urged against this scheme, viz.,

(a) Noise, and

(b) Backing up the returns

The noise will occur when the steam valve is opened and 5 lb. steam is shot into the cold steam main supplying the radiators. This may be overcome to a considerable degree, however, by using a small bypass around this control valve with a valve in the bypass and with the valve adjusted so as to permit just sufficient flow of steam through the bypass to keep the main (and perhaps a portion of the risers) warm. This is illustrated in Fig. 1 and the result is that, when the main valve is opened, the steam does not enter a cold pipe line and much of the noise is eliminated.

The backing up of the returns will be caused if both the steam valve and return valve are opened simultaneously due to the fact that the pressure in the radiator piping system requires a short time to build up to the maximum and there is a time interval before this maximum is reached. This might be overcome by placing a pressure control on the return (on the radiator side of the stop valve) which would prevent the opening of the stop in the return until the pressure in the return line has reached the proper amount. This is shown in Fig. 2.

UNIT HEATERS ON VACUUM SYSTEMS

With a vacuum system of steam heating the situation is somewhat different. The temperature control obtained usually is through

(a) Graduated valves

(b) Individual thermostatic radiator supply valves

(c) Pneumatically operated radiator valves, or

(d) Motorized valves controlling the supply to several radiators in a group

and the introduction of 5 lb. steam pressure on the supply side of the radiator valves causes no serious difficulty in any of these control methods.

The system, therefore, may be arranged as shown in Fig. 4 and, with blast traps on the unit heaters, should be entirely satisfactory. From this it will be seen that it is entirely practical to install unit heaters on vacuum systems of the ordinary type and their use in such cases can be recommended.

UNIT HEATERS ON VAPOR SYSTEMS

It is difficult to say anything very definite on the subject of unit heaters connected on vapor systems, largely because of the variation between different methods of vapor heating and the pressures at which they operate.

Vapor systems may function a portion of the time by self-induced vacuums at pressures far below atmospheric; other types operate at a few ounces above atmospheric but never below atmospheric, or into negative pressures. Some use themostatic traps on the radiators while others have the return outlet of the radiator open to the return or water-sealed with a pin-hole vent for the air.

Let the vapor system with an automatic boiler return trap, a vented air eliminator, and normally operating at a negative pressure caused by a self-induced vacuum be considered first. In this system, after the air has once been blown out by introducing a positive steam pressure in the piping long enough to expell the air, the returns can be injected back into the boiler with the aid of the automatic boiler return trap regardless of the positive or negative pressure which may exist in the radiator portion of the system.

OPERATION OF AUTOMATIC RETURN TRAP

This plainly is evident when the methods of operation used in the automatic boiler return trap is considered. If it is imagined that some sort of a reducing, or stop valve exists in the steam supply of main to the radiators, the pressure of 5 lb. on the boiler necessary to operate the unit heaters will not extend into the radiator system and the radiators will be supplied by means of a throttled steam line.

As a result, the steam in the radiators will condense at a rate in excess of the rate at which the steam is being supplied and a partial vacuum forms. Let this vacuum, for example, be assumed as 10 in.

As a result, the steam in the radiators will condense at

The situation in the vicinity of the automatic boiler return trap under these conditions will be pictured in a diagram in the next instalment of this article and the operation will be explained.

(To Be Continued)

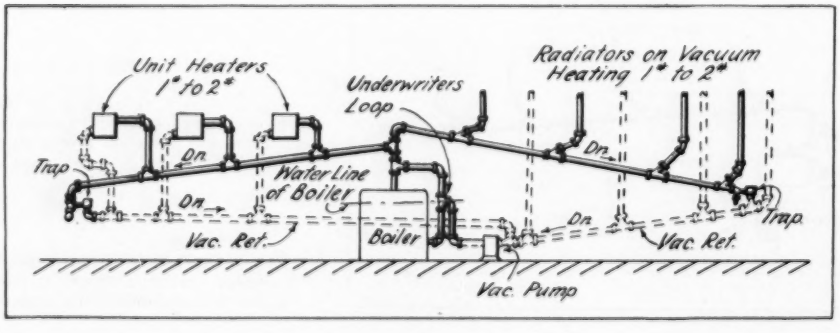
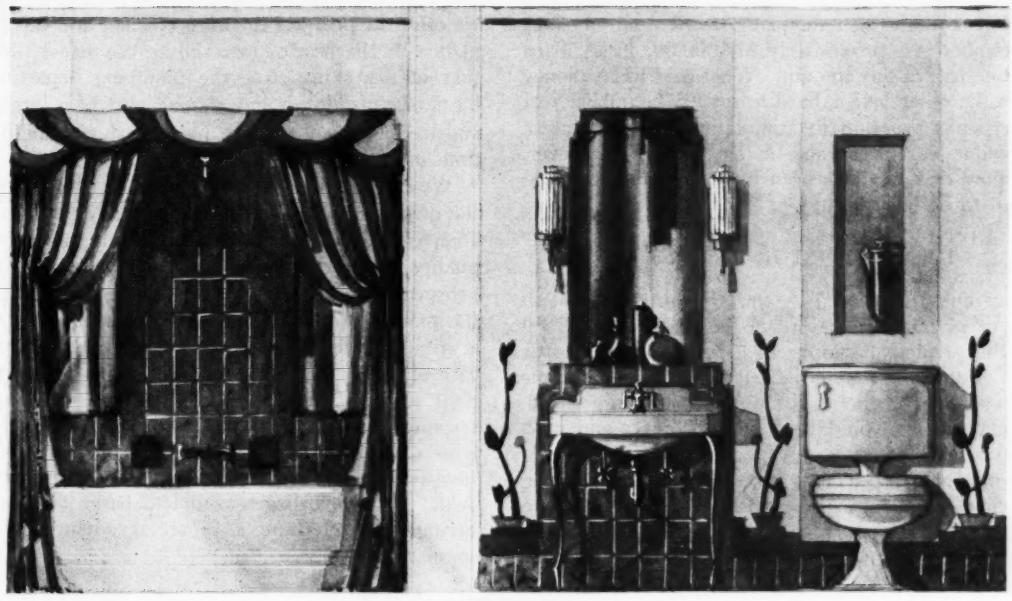


Fig. 4—Typical vacuum steam system combined with unit heaters



"For this type of work we make a water color painting or colored sketch by an artist"

Contractor Sells
Personalized Plumbing

IN the remodeling of finer bathrooms, bathrooms costing upwards of $1,500.00 we offer "Personalized Service." These bathrooms are generally carried out in a grand manner with colored fixtures and colored treatment of the walls. For this type of work we do the following: The making of a water color painting or colored sketch by an artist, showing the best adaptation of color to the owner's bathroom, bearing in mind the colors that are most pleasing to the owner. Then the finding or making the materials to carry out the artist's conception. Then the work itself always under constant supervision guaranteeing the completed bathroom to be as perfect as possible.

The theory of how one job sells another has always been a favorite with us. In our experience with remodeling work, a satisfied customer is one of our best salesmen. In fact we have worked on the thought of asking our customers if their friends or neighbors contemplated doing some remodeling. To further this thought, we made a personal call during the holidays, last year, to most all of our customers of the past two years, giving them a holiday gift, consisting of a jar of fixture polish, put up in an attractive Christmas package. Indirectly we inquired if their friends or neighbors were thinking of modernizing. As a result we were able to call on prospects and we received two contracts.

Another method we have used to help sell remodeling work has been the suggestion of revising the layout of the bathroom to make it more practical. For instance, we suggest the installing of arches over the recessed tub, linen closets in bathrooms, control of lights by a switch at the door, providing Venetian medicine cases with side lights, showers over tubs, side walls of marble, vitrolite, tile or linoleum, concealing the radiator, or a host of other ways depending upon the condition of the job.

One of the most interesting and pleasing incidents so far was the awarding of our largest FHA job. Last March at a fraternity dinner a group of us were discussing our winning DOMESTIC ENGINEERING'S First FHA Prize Contest. One of the men wanted to know more as he intended to remodel his home. We gave him a copy of DOMESTIC ENGINEERING which contained the story of the contest. A few days later he called and asked that we quote him on his work. We estimated the job, gave him the price and received a $2,000.00 contract. This was without competition because, as he said, "I think that you are thoroughly capable of handling this work in the very best manner."

To compute the results of our activity in modernizing work using FHA money in dollars and cents is easy, but to estimate the real worth of our activity is impos-

Note: This article is a continuation of the material beginning on page 62, December issue, which told how contractor won FHA contest and how resultant local publicity has won new business for him.

sible. The volume of remodeling work secured since last September is approximately $17,000.00. FHA loans secured one-half of this amount. What part FHA money played in the other half is hard to say. The publicity of the advertising program in stimulating business has a definite value not measurable in any sense. However, we do know that we have been busy, we are busy, and we intend to be busy.

TURNING POINT IN BUSINESS

The beginning of the FHA was the turning point in the history of our business since the depression. Previously the greatest handicap in securing business was the fear of unsettled conditions and financing. Home owners wanted work done, but were afraid to go ahead, afraid that money would be hard to secure, and as a result remodeling work was at a standstill. The FHA, offering money at 5 per cent, removed that fear, creating a great field of modernizing work. It was up to us to cash in on all of this work. This is what we did.

To overcome the price cutting of d.t.u. organizations, we offer the prospect the most efficient and capable workmen with the best of materials. We stress the thought that in many instances the plumbing department of a d.t.u. organization is but a small part of a large concern and to get any service or any adjustment might require time and red tape.

We point out the fact that our nearness assures the owner of very prompt action in any emergency. We compare our line with that of the d.t.u.'s in regard to quality and then price. It isn't very hard to show a prospect that this one feature, a product guaranteed by the manufacturer and further guaranteed by us, surpasses a product purchased without a guarantee of any sort. In case of a very obstinate prospect, we offer to install the d.t.u. product with the understanding that we assume no responsibility and guarantee nothing. This offer always wins them over. They see how foolish it would be to save so little at such a tremendous chance to lose a great deal. To jeopardize a complete bathroom for a small savings on the fixtures, is an argument against d.t.u. competition.

Business—

(Continued from Page 52)

sessed or have been able to possess in the past.

The general improvement of business convinces me that we are on the eve of a new era in home building. The heavy industries which depend so largely on new construction were among the last to receive the benefits of improved conditions. From many sources now comes the news of improvement in the heavy industries.

Ayres

Leonard P., vice pres., The Cleveland Trust Co.

Cleveland, Ohio.—Colonel Leonard P. Ayres, vice-president of the Cleveland Trust Company, predicts that 1936 will be a better business year than 1935 by approximately 10 per cent but that it will not see full recovery or bring an end to the unemployment problem.

Specifically, Col. Ayres predicted that:

The value of residence construction contracts would increase more than 50 per cent.

The value of non-residence building contracts would increase not more than 10 percent.

The volume of industrial production would exceed 1935 by less than 12 per cent.

Industrial employment would improve not more than 10 per cent.

"Fundamentally," Col. Ayres said, "our well-being as a nation depends on the changes in the volume of goods that we produce and consume. We may note that the per capita volume of all forms of production was 100 in the average of the three pre-depression years, 1927, 1928 and 1929.

"It fell to 65 in the low year of 1932. It will be about 77 in the year of 1935. Those figures show a fall of 35 points in the three declining years of the depression and then an advance of 12 points in the three recovery years.

Pumps—

(Continued from Page 66)

sure. Should an attempt be made to use 1 in. pipe, Table I shows that the friction loss is 8.4 ft. per hundred feet when handling 10 gallons per minute which would mean a loss in the discharge line of 8.4 ft. divided by 2.31 (2.31 ft. being equivalent to one pound pressure) or the friction loss would be equal to more than 36 lb. for a pipe line 1,000 ft. in length. This would, of course, be excessive, as this must be deducted from the pressure carried in the tank and in this case, if 40 lb. pressure is carried in the tank, only 4 lb. would be available at the end of the discharge line. If, however, the discharge line is already installed, sometimes it is advisable to increase the size of the motor with the outfit and carry a higher pressure on the system rather than change the discharge line.

When the water in the well, from which supply is to be taken, stands (or lowers when pumped to the desired capacity) more than 26 ft. vertically below the location of the pump, it is called a deep well, and requires a different type of pumping equipment than when the water level is at a lesser depth.

Table I

Friction of Water in Pipes

Loss of head in feet due to friction, per 100 ft. of new, smooth, iron pipe. Multiply the friction loss in feet by 0.433 to give equivalent loss of pressure in pounds

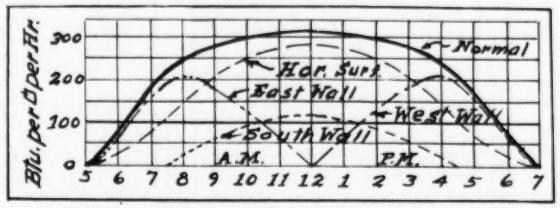
Gals.	½ Inch Pipe		¾ Inch Pipe		1 Inch Pipe		1¼ Inch Pipe		1½ Inch Pipe		2 Inch Pipe	
per Min.	Vel.	Fric.	Vel.	Fric.	Vel.	Fric.	Vel.	Fric.	Vel.	Fric.	Vel.	Fric.
1	1.05	1.50										
2	2.10	5.30	1.20	1.40								
3	3.16	11.30	1.80	2.90	1.12	0.90						
4	4.21	19.20	2.41	5.00	1.40	1.52	0.86	0.40	0.63	0.19		
5	5.26	29.00	3.01	7.50	1.86	2.32	1.07	0.60	0.79	0.28	0.51	0.09
10	10.52	105.00	6.02	27.10	3.72	8.40	2.14	2.18	1.57	1.02	1.02	0.36
15	....	....	9.02	57.00	6.13	18.90	3.92	4.65	2.72	2.25	1.53	0.81
20	....	....	12.03	97.00	7.44	30.10	4.29	7.90	3.15	3.70	2.04	1.29

34—

Sun Effect

Rooms having any of their walls, glass, or the roof immediately above, exposed to the sun will receive a certain amount of additional heat over and above the Btu. normally transmitted due to the difference in air temperature. This additional heat is termed "sun effect," and may run as high as 75% or 80% of the entire cooling load.

The chief characteristics of sun effect are that the greatest amount of heat is transmitted when the receiving surface is "normal" or perpendicular to the sun's rays and the heat transmitted into the room is almost immediate if coming through glass but is greatly retarded if coming through walls or roof.



Typical Sun Effect on Aug. 1st

Published by Automatic Heat and Air Conditioning

35—

Allowance for Sun Effect

The allowance for sun effect in the heat removal calculations is a more or less doubtful matter, but it would seem that the heat coming through the walls suffers so much "time lag" as to be almost negligible.

In the following, the glass factor has been increased slightly to include a small allowance for the wall and the actual wall area has been disregarded.

Allowances for Sun Effect

Surface	Sun Glass	Wall	Roof
North Wall	None	None	....
East Wall	50 Btu.	None	....
South Wall	40 Btu.	None	....
West Wall	50 Btu.	None	....
Flat Roof	35 Btu.	None	10 Btu.

All of the above Btu. are per sq. ft. of surface. "Sun Glass" is the portion of the glass surface receiving the sun's rays at any one time and may be taken as (Height of Window) × (Width of Window minus Inset) when "inset" is the distance that the window is set back of the surrounding construction.

Copyright, 1934, by H. L. Alt

These four automatic heat and air conditioning tables carry on the series. The information has been developed so as to be similar to that which the reader might gather in the form of notes while studying complete articles and text books on the subject of air conditioning

36—

Evaluating Sun Effect

Inspection of sun effect curves on No. 34 indicate that they are not cumulative except for the south side and roof; that is, when the maximum effect occurs on the east or west sides, it does not occur on the other sides or roof, but when it ocurrs on the south side it also occurs on the roof.

From this fact may be formulated the rule that the sun effect to be added is the largest amount obtained in any of the three combinations of

(a) Sun effect on East Wall alone.
(b) Sun effect on South Wall and Roof.
(c) Sun effect on West Wall alone.

When electric lighting has been included in the heat to be removed, it may be deducted from the sun effect on the assumption that no lights will be required on a bright, sunny day.

If the light load exceeds the greatest sun effect obtained by (a), (b) or (c) above, no additional allowance need be made for this item unless daytime lighting exists.

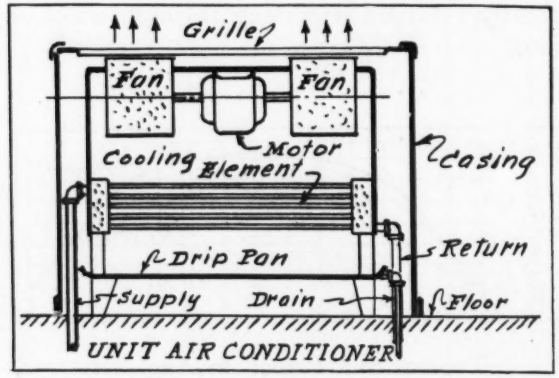
Published by Automatic Heat and Air Conditioning

33—

Unit Air Conditioners

Unit air conditioners have been developed to care for conditioning one or more single rooms. Usually the unit includes one or two fans, a heating element, a cooling element (or a combination element for both purposes) and, often, some type of dry air filter. Refrigeration, when used with such units, generally has the refrigeration machine located at some convenient point from which piping is run to the unit.

A typical unit of this type is illustrated below.



Unit Air Conditioner

Copyright, 1934, by H. L. Alt

$1000 in cash

for the best slogans for the New Silent Glow "SEALDHEET"

● We will give $500 as first prize and 138 other cash awards for slogans which best describe an oil burner which is as far advanced today as was the original burner with automatic controls.

139 AWARDS

Totalling $1000.00 in Cash

1st Award	$500.00
2nd Award	100.00
3rd Award	50.00
4th Award	25.00
10 Awards each	10.00
25 Awards each	5.00
100 Awards each	1.00

A slogan such as "Seals the heat in the boiler" gives you an idea what we want.

The new Silent Glow "Sealdheet"

1. Saves 25% to 35% on fuel oil consumption (the greatest consumer appeal ever offered in the oil burner market).
2. It has the mass market appeal.
3. It is revolutionary in design and construction.
4. It is streamlined in appearance.
5. It has been pronounced by experienced engineers who have pre-viewed it to be the greatest oil burner development they have ever seen.

There are no strings to this slogan offer. You don't have to buy anything. You don't even have to be a Silent Glow dealer.

Enter now. Write for the descriptive booklet and the official Entry Blank. They are free.

Mail the coupon now and get your hat in the ring for one of these big cash awards.

SILENT GLOW OIL BURNER CORPORATION

FACTORY: HARTFORD, CONN. BRANCHES: BOSTON, CHICAGO

FULL DETAILS AND ENTRY BLANK FREE ON REQUEST

SILENT GLOW OIL BURNER — Sealdheet

SILENT GLOW OIL BURNER CORP. Dept. DE1
Hartford, Conn.

Please send—free—descriptive booklet on the new Silent Glow "Sealdheet" and Official Entry Blank for $1,000.00 Slogan Contest.

NAME .....

STREET .....

CITY ..... STATE .....

NAME OF FIRM .....

Continue FHA—

(Continued from Page 78)

Since the plumbing and heating industry stood out as the first group really to go into action for FHA in an effective way, it should now show itself solidly united back of the program to have Title I continued after April 1, 1936.

The letter reproduced is for your convenience. There is no reason why it should not be copied out on your letterhead and signed by yourself and any other members of the firm and likewise signed by your journeymen, because every member who takes his livelihood from the building industry is interested and has a right and a duty to let his representatives at Washington know that he wants Title I of the National Housing Act to continue its good work.

Boiler and Burner—

(Continued from Page 74)

The oil which is not returned to the tank, then passes through a 2 kilowatt electric heater equipped with a thermostatic control which cuts in only at such times as the below-the-water-line heaters are not providing sufficient hot oil. This condition arises only on starting in the morning or when the heaters need cleaning. An electric pilot on the control panel shows when the electric heater is on or off and usually is a good indication of when the other heaters need to be cleaned. The electric heater is provided with a three valve bypass so that it may be taken out of service without turning off the burners. All heaters are equipped with emergency non-adjustable relief valves ahead of any other valves piped to the return line to prevent damage to the heaters should the source of heat be left on and should the flow of oil through the heater stop.

After leaving the electric heater the oil going to the burner passes through a pair of discharge oil strainers with $\frac{3}{64}$ in. screens arranged in a manner similar to that of the two strainers described previously. From the strainers, the oil goes to the individual automatic control systems, one for each boiler. As stated in the part of this article dealing with control systems, the method selected for this building was one that would gradually vary the size of the fire only as much as necessary to maintain a constant predetermined steam pressure. Pressurestats of the potentiometer type, consisting of a resistance coil actuate small reciprocating motors, each of which has integral with it, an oil valve providing a varying rectangular orifice to increase or decrease the fire as required. This oil valve is provided with maximum and minimum stop positions for the purpose of preventing the fire from going beyond the range of efficient combustion and to stop at any intermediate point required to maintain correct steam pressure. It is necessary, of course, to operate with as low a draft as possible to keep the excess air down to a minimum. Each oil valve is connected with its respective uptake damper by straight line rod linkage arranged to compensate for any variation in the proportion of the damper opening in inches to the cross-sectional area. This is arranged with the idea of obtaining a constant ratio between the area of the damper opening and the area of the valve opening and so as to produce a consequent high efficiency, provided, however, three things have previously been taken into account. First, a constant oil pressure is maintained ahead of the control valve. This is designed for the use of the adjustable relief valve set at a definite pressure, as described above. Second, the oil ahead of the control valve must be at a constant viscosity, which is effected by means of the preheating system which keeps the oil at the correct temperature. Third, changes in outside atmospheric conditions which, in this case, are provided against by the use of a balanced damper located between the stack, proper, and the nearest uptake damper.

The oil lines from each control valve go directly to its respective burner. There is a circulating line from each burner connected into the return line with a shut-off valve which is used after a shut down period to rid the burner of any cold oil that might lie in the lines. All pipe lines are insulated with standard magnesia covering.

The oil burners are of the horizontal rotary type consisting of a ½ h.p. totally enclosed air-cooled motor, driving a solid steel shaft which in turn drives a fan and a rotating cup atomizer. The air is admitted to the fan through an adjustable ring type register. In this case each of the burners was equipped with an air cone with four straight vanes to throw a conical shaped fire suited to the type of boiler used.

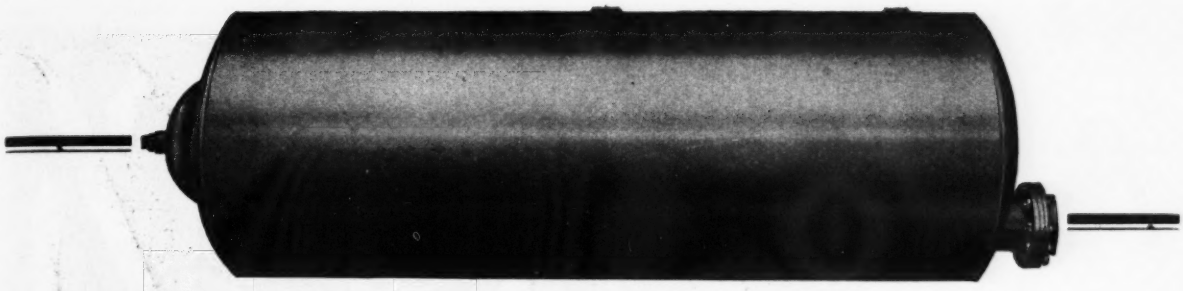
The combustion chambers, as shown in the accompanying drawing, provide 65 cu. ft. of combustion space, which was figured to be ample to burn a maximum of thirty gallons of oil per hour, each. To protect the concrete floor, the combustion chamber floor was built of 2½ in. of insulating brick. Though the burners are mounted on the front of the boilers, the air for combustion is admitted through an opening cut at the rear of each boiler. This air is carried through a fire brick tunnel to the front of the boiler for the purpose of providing preheated air and further, to cool the floor. The side walls of the fire box are entirely insulated with 2½ in. of insulating brick between the combustion chamber walls and the steel base of the boiler.

All-important in an installation of this type, operating without much attention, is safety. Safety controls are provided to cut off the individual burners and oil supply when

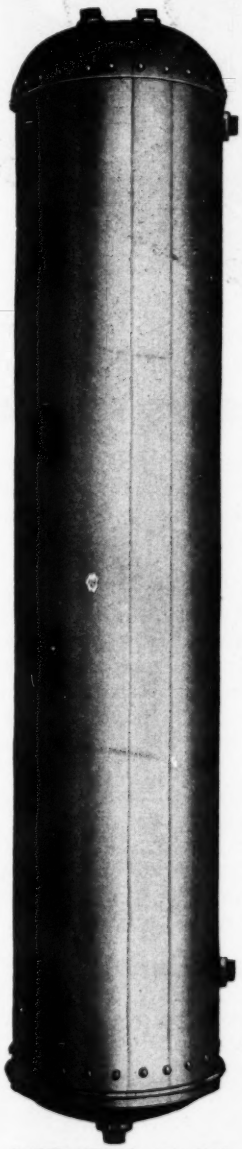
1) The water in the boiler drops below the level of safe operation. This is accomplished by a float type low water cut-off switch.
2) The steam pressure goes beyond a set point. This is possible in the event that the load is so light that even the smallest fire builds up too much steam pressure. An additional pressurestat is used to insure safety in this instance.
3) In case of flame failure for any reason. Should the fire go out due to lack of oil, dirty strainers, or any other cause, a stack safety cut-off operates to stop the equipment.

All of the above controls cut off the burner motor and oil supply. All of them break the coil of the push button starter so that they must be reset by hand, giving the operator time to determine the cause of the failure.

The oil supply is also cut off should the burner motor stop or the air pressure to the burner go below that required. This is accomplished by an air-oil interlocking valve controlled from a copper tube in the fan housing.



G & C Copper Silicon Alloy Storage Heater. Federal Specifications WW-P-541



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The improved All Copper G&C Boiler Riveted Top and Bottom and Reinforced to insure against collapse.

Also made in EVERDUR or HERCULOY as specified.

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HERCULOY or EVERDUR AS SPECIFIED

Thirty Years of Experience, Finest Quality Materials, a Corps of Artisans skilled in the fabrication of Copper and Copper Alloy Products, Strict Supervision, Competent Engineering, Rigid Testing and "Delivery on Time."

These are the "Reasons Why" Jobbers and Contractors throughout the country turn to Gerstein & Cooper when they require the best in rust, and corrosion proof Boilers, Tanks and Storage Heaters.

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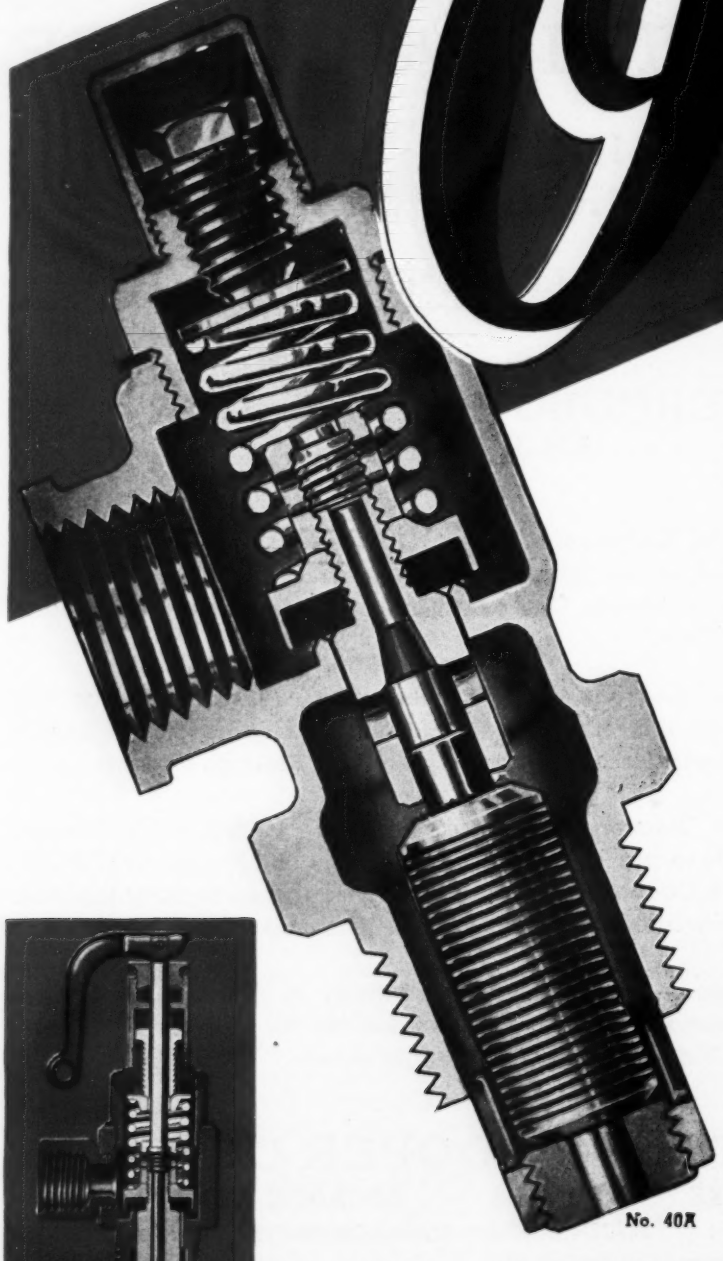
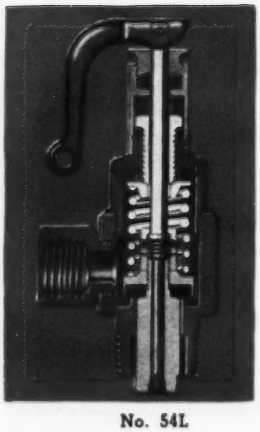


No. 40R



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BUSINESS BOOMS FOR YOU

Again Watts takes the lead. This is not a surprise. Every jobber, every contractor knows Watts—knows that for sixty-one years Watts has pioneered.

First with the fully automatic excessive temperature and pressure relief valve. First with lever construction before it was required; now it is adjustable with lever . . . accessible, non-corrosive, dependable. Rely on Watts to have the best. Now A. G. A. puts its O. K. on types listed.

Watts makes these valves. Watts secured the O. K. Watts has increased production for the big demand. Will you cash in on this wonderful opportunity? The ruling is definite . . . there are thousands of installations to be had.

Order Watts No. 54 pressure and temperature fusible plug valve as shown at left . . a low priced approved valve . . and . . the Watts fully automatic 40 series that represents the latest engineering advance in a temperature and pressure relief valve, the valve of the future for perfect protection.

Be prepared. Stock these valves. There is a real opportunity for immediate business. Prices and complete information upon request. State quantities and application.

This year plan to attend the International Heating and Ventilating Exposition in Chicago. Visit us in Booth No. 118.

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PERFECT PROTECTION

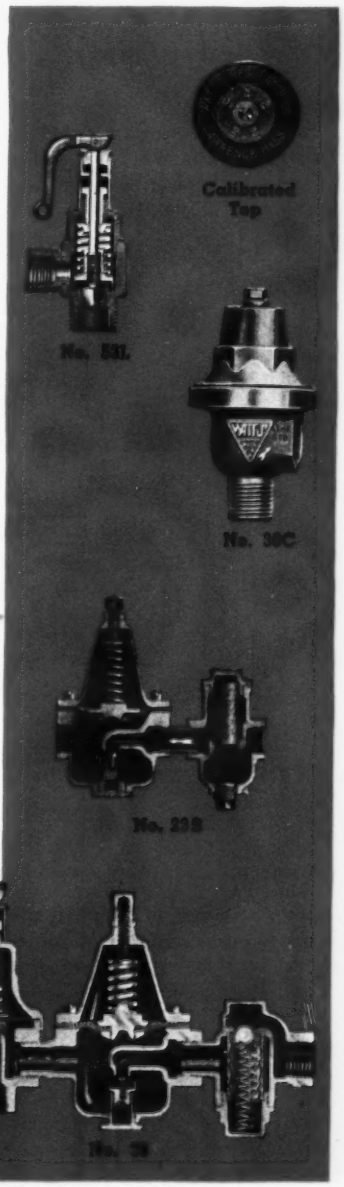
Examine the Watts line. Each unit is as perfect in its field as the relief valves O.K.'d by A. G. A. There are thousands of installations in use.

Diaphragm type relief valves, strainers, water pressure regulators, hot water heating systems, boiler water feeders, process feeders and low water cut-offs.

It does not matter which one of the Watts line you specify or use, you will find that Watts has designed and manufactured a dependable unit and Watts can prove their points of perfection.

The engineer admires and approves Watts design, the perfection of construction. The jobber knows there is a secure profit; Watts products are in demand with no complaint. The contractor knows Watts units are easily installed, accessible, dependable—and that the price is right. The householder rests secure in comfort with Watts perfect protection.

Watts has a reliable record . . . a service record of three generations. Watts has designed for the next generation, so look to Watts for leadership. Send for complete information.



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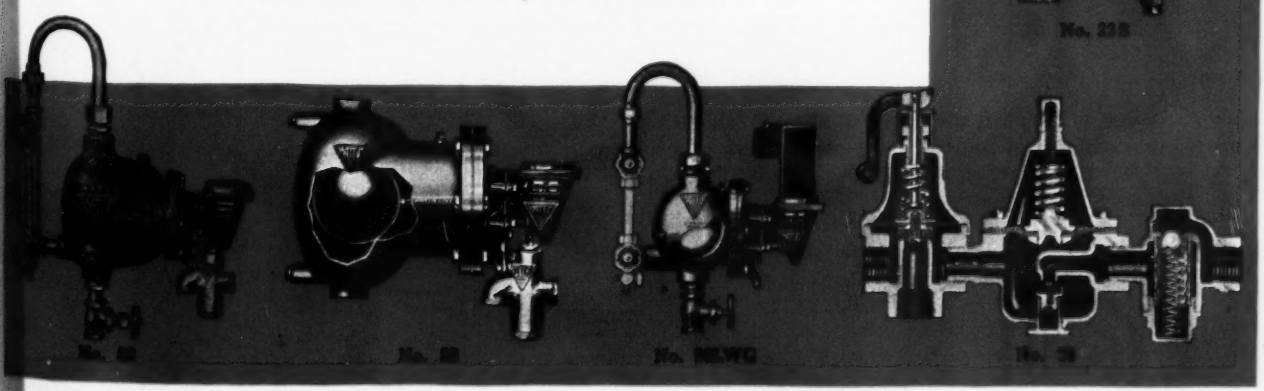

Questions

Pressure Problem **Reader's Question**

Pressure Problem

- *Question is how to maintain constant pressure on a dead end pipe*

To the Editor:

We are enclosing a sketch of a booster pump installation which we have just completed—see Fig. 2. The pump consists of a centrifugal pump with a 5 hp. motor and is controlled by a pressure control and a

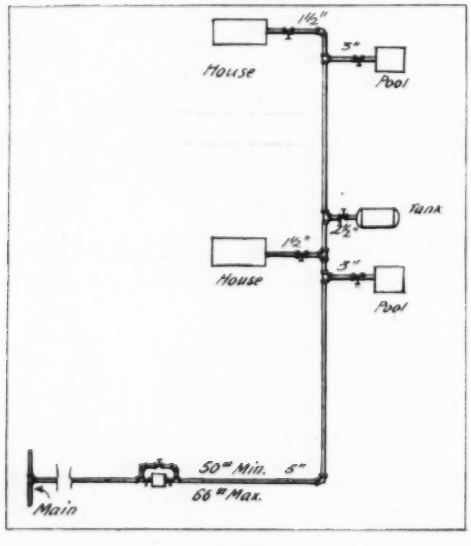

Fig. 1

magnetic starter which turns the pump on at 50 lb. and turns it off at 66 lb. While there are only two residences on this job, the pressure frequently drops on the 3 in. line so as to really require use of a booster pump.

However, you will notice that there are two swimming pools on the line and, if they are filling either pool, the pressure drops whereas when the pools are not being used, there is very little water drawn and the pump, therefore, will turn on and off every 15 seconds. We think that the thing to do is to install a pressure tank at the point shown and that this should be made a 750 gal. tank. Please advise us if we are right or if there is any better way to handle a booster pump installation where so little water is being used at times.

Kansas. R. G. J.

To the Reader:

You are up against the old proposition of trying to maintain a constant higher pressure on a dead end pipe system and this is a difficult thing to do. The tank you suggest will accomplish a measure of improvement. Let us see just what a 750 gal. tank will do if connected into your system as shown in Fig. 1.

If the tank is installed with no air pressure on it and water runs into the tank and compresses the air up to a gauge pressure of 50 lb., which is the low pressure you are maintaining on the system, the air will occupy about 23 per cent of the tank volume; then if the pump raises the pressure up to 66 lb., the high pressure carried; the air will be farther compressed to about 18 per cent of the tank volume. In the low pressure condition there will be 77 per cent of water in the tank, and, in the high pressure condition there will be about 82 per cent water.

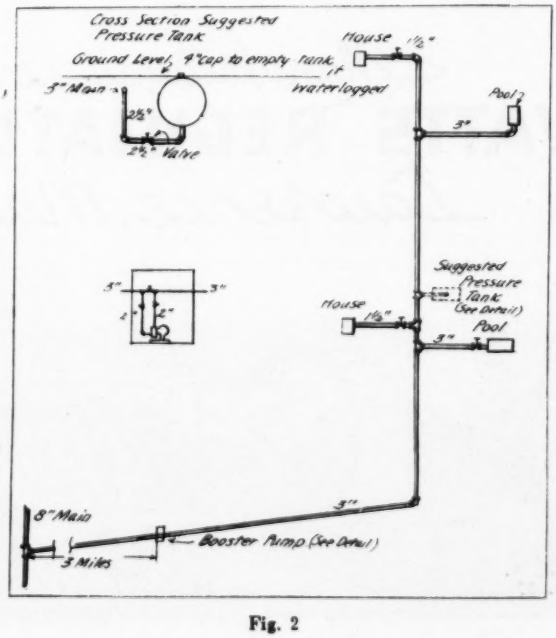

Fig. 2

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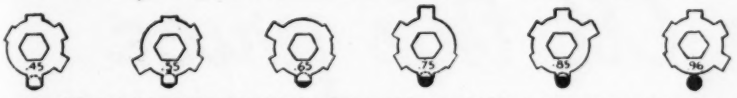
ORIFICE CONTROL

THE SIX SPEED VENT THAT MAKES COMFORT RETURN ADDED PROFITS

on every ONE PIPE STEAM JOB



DISC SHOWING 6 DIFFERENT POSITIONS, FROM .45/1000THS PARTIAL OPENING, TO .96/1000THS COMPLETE OPENING

The graduated Orifice disc furnishes *SIX VENTING SPEEDS*

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"CONTROL BY VENTING"

MAKES POSSIBLE

BALANCED CONTROLLED HEAT

BY EQUALIZING DISTRIBUTION

For Any One Pipe Steam User At Prices They Can Afford to Pay

CONTROL BY VENTING a distinct advantage on coal fired jobs—is a decided necessity on oil fired or automatic heating. Every old one pipe installation is a potential customer for "equalized heat distribution" replacements and each new job should specify Nyavco "Control by Venting." You can heat equally the LARGEST with the LEAST—the furthest with the nearest.

Six definite positions of setting assure six different speeds of venting. Nothing left to chance or guesswork. The largest vents five times as much as the smallest — the others proportionately.

One Pipe Steam Heat

- *low in first cost.*
- *easy to install.*
- *clean and quick heating.*

Now offer the heating trade a new avenue of profit

HEAT EQUALIZATION

with

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Gentlemen—Please send us explanatory Nyavco literature and instruction sheet.

Name..... Address.....

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YOU CAN PROTECT EVERY BOILER AGAINST LOW WATER HAZARD

THE No. 545 "Genuine Detroit" Boiler Protector safeguards any low pressure steam boiler against danger from low water or excessive steam pressure.

No other device available offering similar protection, can be purchased as cheaply.

It is easy to install and requires no further attention unless a critical boiler condition develops—and then only to renew the fuse. This is done by the maid or houseman as easily as disconnecting a floor lamp or replacing a light bulb. It does not require a service call.

The No. 545 is not affected by boiler surge. Its protection is not lessened by boiler scale or sediment.

Order your stock of Boiler Protectors now and cash in on the very active market this Protector has opened up.

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DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

Now, if water is drawn in one or both of the houses, the pressure in the line will not fall below 50 lb., until 82 per cent—77 per cent or 5 per cent of the total capacity of the tank has been withdrawn in the shape of water. At that time the air will be re-expanded down

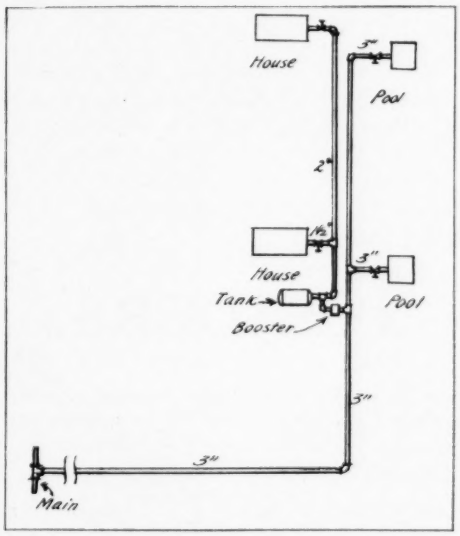


Fig. 3

to a point where its pressure is only 50 lb., and the pump will be cut in by its pressure control and refill the tank.

On a tank of 750 gal. total capacity this indicates that

750 gal. x 5 per cent or 37½ gal.

can be withdrawn from the tank before the pressure

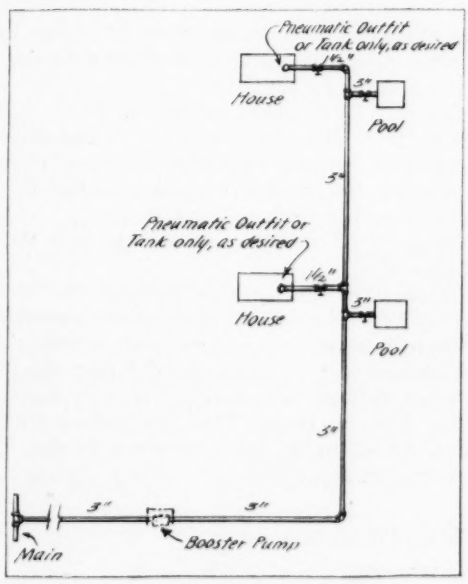


Fig. 4

will fall sufficiently to have the pump start. Now this will not require much use of the water in the residence in order to bring the pump into action, but it will prevent the starting and stopping of the pump on 15 second intervals the way it is doing now. As an added suggestion suppose, for example, a small air compressor were used and air pumped into the tank until it had 45 lb. air pressure and then the water was allowed to flow in.

Under this condition, the tank at 45 lb. would have 100 per cent of air; at 50 lb. it would have 92 per cent of air and at 66 lb. it would have about 74 per cent of air; then at 50 lb. it would contain 8 per cent of water and at 66 lb. it would contain 26 per cent of water, allowing the difference to be drawn out before starting the pump of

(26%—8%) x 750 gal. or 135 gal.,

which is quite an increase over the previous arrangement. And all this is accomplished not by increasing the size of the tank but simply by using an air compressor. This same air compressor would be very useful in replacing the air should the tank become

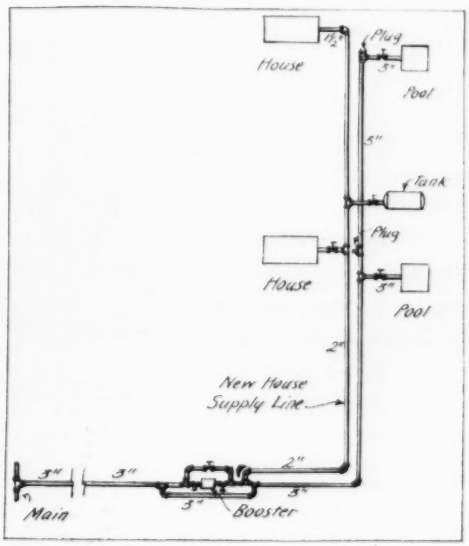


Fig. 5

water logged—as in time it will—and the air could be pumped into the tank right against the water pressure without draining the tank or anything else.

Another point we see in your layout is that the booster pump not only has to boost the pressure for the small amount of water used in the residences but also for the large amount of water used in the pools; as we understand the matter, there is no necessity for high pressure on the pools and consequently the using of the booster pump for pool supply may be unnecessary. In Fig. 3 we have shown a layout that may have some merit if the local conditions permit. This idea is to move the booster pump up to some point where it only will have to supply the residence water and to connect the tank you propose (either with or without an air compressor) onto this line so as to avoid frequent starting and stopping of the pump. It will involve a new 2 in. line from the booster pump to the two residences but the rest of the piping will remain as at present.

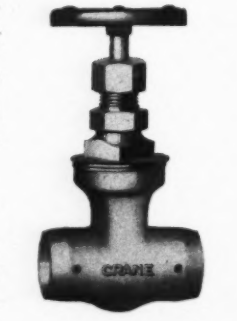
HAND TO MOUTH *Buying* MEANS HAND TO MOUTH *Profits*

KEEP A STOCK OF GOOD MATERIALS ON HAND *Always*

When you install equipment or piping, it takes valves and fittings to complete the job. You can get everything you need—valves and fittings as well as the equipment itself—from Crane Co.

When you figure a job you figure in the valves and fittings, too. Why not order them right along with the boiler or plumbing fixtures. Then you're sure you've everything you need for the job—and you're sure of what you're paying for it.

Here's something else to remember. A stock of standard items is a sure way to avoid loss of time and money running around in an emergency buying materials piecemeal. Hand to mouth buying means hand to mouth profits. Keep a stock of *good* materials on hand always—Crane materials.



CRANE
SOLDER JOINT
GATE AND
GLOBE VALVES

Here are some Crane labor savers. Regular Crane Brass Valves with solder ends. Thorough, fool-proof bonding. When the "silver proof-ring" shows, it's a joint!

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VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

A third proposition is to provide two small pneumatic outfits for the residences, located in the basements of the residences, which outfits will have air compressing provisions with them as part of the regular equipment. See Fig. 4. Then allow the supply to the pools to vary in pressure, which it can do without trouble to anyone.

The last idea is really a substitute for Fig. 2 in case the location of the booster pump cannot be changed and shows in Fig. 5 the booster pump retained in its present position and a new 2 in. line carried up to the residences to which the tank is connected. Any one of these should give you the result desired.

Questions For READERS

A striking feature of the large number of answers to the November question received from readers was that every reply indicated the correct solution to the problem. The question was:

A room radiator for steam figures out as 50 sq. ft., but only a 40 sq. ft. radiator is installed. If the temperature difference on which the 50 sq. ft. calculation is based is zero to 70 deg. Fahr., at which outside temperature will the room begin to fall below 70 deg. Fahr.?

Because it provided two different simple and accurate methods of solution, the reply submitted by C. M. L., Utica, N. Y., was selected. It reads:

The simplest solution is that if 50 sq. ft. will heat the room through 70 degrees temperature difference, then 40 sq. ft. will heat $40/50 \times 70 = 56$ degree difference.

Then 70 deg. Fahr. — 56 deg. Fahr. = 14 deg. Fahr., which is the outside temperature at which the room will begin to fall below 70 deg. Fahr.

Or this may be explained another way:

If 50 sq. ft. of radiation is required to heat the room to 70 deg. Fahr. in zero weather and 1 sq. ft. of radiation equals 240 Btu., then $240 \times 50 = 12{,}000$ Btu. required to warm it through a 70 degree rise.

$12{,}000/70 = 171.4$ Btu. necessary to heat through a 1 degree rise.

The 40 sq. ft. of radiation then will emit $240 \times 40 = 9{,}600$ Btu. This divided by the quantity necessary to raise the temperature one degree, that is 9600/171.4, gives 56 degrees as the temperature difference for which the 40 sq. ft. radiator will provide. Then 76 deg. Fahr. — 56 deg. Fahr. = 14 deg. Fahr., the outdoor temperature at which 40 sq. ft. will maintain a 70 deg. Fahr. temperature within.

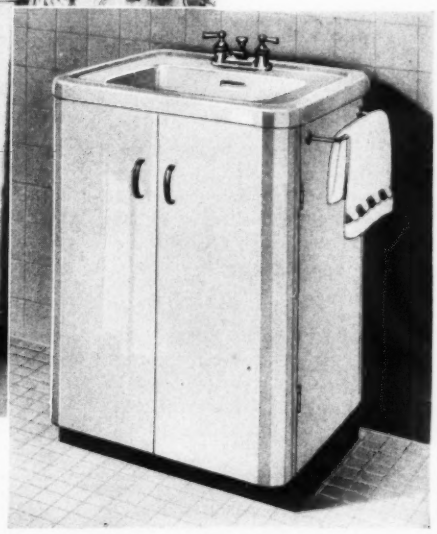
How Would You Answer This Question?

How large a hot water storage tank would you provide for a 40 family apartment house?

Answers based upon your experience, suitable, will be paid for and published in the March issue.

Designed to serve—Nationally accepted

YOU CAN DO MORE BUSINESS WITH THE CRANE *Quality Line*



- **TODAY! THE NEW CRANE CORONADA LAVINET**
- All Steel Cabinet, For Ample Storage
- Shelf-In-Door For Toiletries
- Chromium Towel Bars

Porcelain enameled cast-iron lavatory with rectangular basin. Cabinet all of steel with baked enamel finish, side hinged doors, chromium towel bars, and exclusive shelf-in-door feature which provides excellent accommodation for toiletries. Similar to the LAVINET is the COLORADO CABELO cabinet lavatory—a COLORADO wall-type lavatory with a steel cabinet base. Single door with shelf-in-door feature.

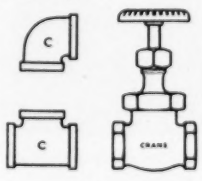
● The CORONADA LAVINET is Crane's answer to the perplexing lack of storage space in small bathrooms and lavatories. Your customers will pay handsomely if you can give them that space without altering walls. The LAVINET uncovers additional profits for you.

The LAVINET is typical of Crane Co. effort to place in your hands merchandise that has sales appeal. It fills a serious need. It's easy to install.

Your customers know the name Crane and the quality it stands for. You can supply any kind of tub, closet, lavatory or sink they can ask for . . . and at a price they can afford. You can get everything you need for an installation from a single source, with the advantages of quick delivery and a complete line to select from.

You can do more business with the Crane quality line.

CRANE QUALITY IN EVERY HIDDEN FITTING



Look at a Crane bathroom through an X-Ray and you find Crane quality in every hidden fitting. No matter how fine the fixtures appear, it takes Crane quality valves, fittings and brass goods — the "working parts" behind the scenes — to assure dependable service and long life at low cost.

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PLUMBING AND HEATING MATERIALS

Business ON PARADE

Index Up **Metal Markets Firm** **Wholesalers Optimistic**

Another New High

- *Index for the industry climbs to 134.8—Cast iron radiators, water systems among the leaders—Value of October residential permits almost three times year ago*

The DOMESTIC ENGINEERING Composite Curve made another advance during October. The gain of 1.6 raised the index to 134.8.

The most outstanding gains, so far as October shipments were concerned, were enjoyed by cast iron radiators, water systems, and oil burners. Other items continued at about the same rate of advance over the corresponding month of last year as they have been showing in previous months.

The wholesale price index for plumbing and heating equipment, as reported by the Department of Labor, remained at 71.1 However, some slight advances in a few plumbing brass items have been registered since this index was computed, hence it is probably now slightly higher.

Since building permits reached their peak in October and general business as well as FHA modernization work have been showing steady gains, there seems to be little doubt but that the curve will continue upward.

Key Wholesalers

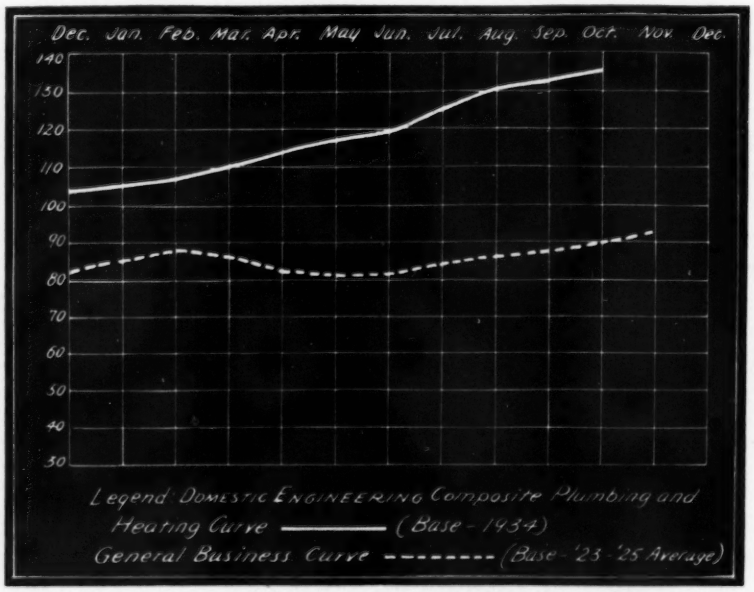
The average increase of November business over the corresponding month of 1934, as reported by 70 wholesalers, was 29.5 per cent. These same wholesalers reported a 15.1 per cent decrease from October of this year. In most cases this decrease was looked upon as being less than was to be expected at this time of the year. Twenty-three wholesalers expect December to show an improvement, 32 expect it to be about the same, and ten expect a decline. A breakdown of these reports by various sections follows:

New England:—Seven wholesalers reported an average increase of 7.7 per cent in November over the corresponding month of the previous year, and a 23.7 per cent decrease from the previous month of this year. Two wholesalers expect December to show an improvement, four expect it to be the same as November, and one expects a decline. New Hampshire reports that it still is adversely affected by the closing of the Amoskeag mills.

Middle Atlantic States:—In this section, 22 wholesalers report an average increase of 25.2 per cent over the corresponding month of last year, and a 23.7 per cent decrease from October of this year. Seven expect December to be better, eleven expect it to be the same, and three expect a decline.

A New Jersey wholesaler reports that competition is becoming more volume-minded and paying less attention to the profit margin. However, the same wholesaler reports that sentiment has improved 100 per cent. Another New Jersey wholesaler reports that the November decrease is not as bad as it appears on the surface, as October was an unusually good month. Another wholesaler in the same State reports that October was the best month that has been experienced in four years. This same wholesaler reports a decrease in price shopping by the trade.

A Long Island wholesaler reports that they are booking considerable new business which will not benefit them until next year. An eastern Pennsylvania wholesaler reports considerable price cutting on boilers and radiators; how-



The plumbing and heating business holds its lead as both the industry's composite curve and the general business curve continue their upswing

SHIPMENT OF PLUMBING AND HEATING ITEMS

	1935 September	1935 October	October 1934	Total 10 Mos. 1935	% Increase 10 Mos., '35 over 10 Mos., '34
Vitreous China Plumbing Fixtures Number of Pieces	241,678	190,229	206,961	2,218,181	99.0
Porcelain Plumbing Fixtures Number of Pieces	3,026	2,713	2,771	22,408	3.2
Cast Iron Boilers Thousands of Pounds	38,640	50,865	44,837	204,635	13.2
Cast Iron Radiation Thousands of ft. of htg. surface	7,701	10,055	9,282	45,491	15.2
Steel Boilers Number of Units	829	787	696	5,856	38.4
Domestic Water Systems Number of Units	8,560	8,946	5,574	93,439	40.1
Range Boilers Number of Units	66,051	80,591	66,740	672,782	43.6
Oil Burners Number of Units	31,311	33,352	19,973	138,053	50.9
Mechanical Stokers (for residential, apartment and general commercial use) Number of Units	9,574	9,728	5,827	37,358	78.0

OCTOBER BUILDING PERMITS—26 Most Active Cities

State and City	New Residential Buildings	Families Provided For	New Non-residential Buildings	Total (Including Repairs)
NEW ENGLAND STATES				
Connecticut				
West Hartford	367,150	33	6,540	426,746
MIDDLE ATLANTIC STATES				
New Jersey				
Maplewood T.	110,000	15	7,400	125,420
Teaneck T.	327,710	60	3,250	335,810
New York				
New York City				
Brooklyn	2,996,850	841	2,377,128	6,339,824
Manhattan	1,675,000	191	1,397,244	6,625,844
Queens	1,183,100	371	1,682,051	3,396,655
White Plains	296,500	84	8,400	310,750
Pennsylvania				
Philadelphia	667,400	181	152,590	1,080,181
EAST NORTH CENTRAL STATES				
Illinois				
Chicago	318,915	45	1,500,288	2,230,706
Michigan				
Detroit	1,306,000	220	907,652	2,755,131
Ohio				
Cleveland	2,688,475	655	223,175	3,212,850
Shaker Heights	206,500	15	11,000	219,550
Wisconsin				
Milwaukee	283,342	50	1,415,455	1,915,471
Wauwatosa	229,600	33	10,825	243,700
WEST NORTH CENTRAL STATES				
Minnesota				
Minneapolis	217,750	58	81,695	456,699
Missouri				
St. Louis	316,500	76	149,180	623,161
SOUTH ATLANTIC STATES				
District of Columbia				
Washington	1,420,900	419	1,057,357	2,762,141
Florida				
Miami	416,270	107	41,590	654,386
Maryland				
Baltimore	333,000	98	227,100	901,860
EAST SOUTH CENTRAL STATES				
Alabama				
Montgomery	367,550	117	5,000	393,177
WEST SOUTH CENTRAL STATES				
Texas				
Austin	203,106	55	59,070	356,353
Houston	617,930	137	72,600	735,900
MOUNTAIN STATES				
Colorado				
Denver	293,800	55	25,507	397,846
PACIFIC STATES				
California				
Los Angeles	1,577,909	422	494,028	2,948,609
San Diego	214,416	81	22,605	307,642
San Francisco	431,120	106	194,112	858,516

ever, this condition is expected to correct itself very shortly.

South Atlantic States:—Five wholesalers in this section report an average increase of 30.6 per cent for November over the same month of last year, and a 20 per cent decrease from the preceding month of this year. Opinion was equally divided as to whether December would be better or remain the same.

East North Central States:—Seventeen wholesalers in this section reported a 25.2 per cent increase over the same month of last year and a 13.1 per cent decrease from the previous month of this year. Seven expect December to be better, seven expect it to be the same, and two expect it to decline. A Peoria, Ill., wholesaler reports that a planing mill strike has temporarily stopped new construction work in that city; however, prior to the strike construction was running equal to or above par, and they expect it to resume on the same scale just as soon as the difficulty is settled.

A southern Indiana wholesaler reports that they are finding it difficult to obtain a profit, particularly on plumbing fixtures. A central Michigan wholesaler reports that collections have been good, that the outlook is excellent, and that 1935 will run only about 30 per cent less than 1929.

East South Central States:—Two wholesalers in this section report an average increase of 19.5 per cent for November over the corresponding month of last year, and a 10.2 per cent decrease from the preceding month of this year. Opinion was evenly divided as to whether December will be better or worse. One of these wholesalers reported that PWA projects in their section are expected to be helpful.

West North Central States:—Eight wholesalers in this section reported an 18.8 per cent increase for November over the corresponding month of last year, and a 21 per cent decrease from October of this year. Three expected December to be better, four expected it to be the same, and one expected a decline.

One Minneapolis wholesaler states that November always runs about 30 per cent behind October in that section. A Kansas wholesaler reports that they attribute the increase in their territory primarily to Government projects in the city, as their country territory is not showing the increased volume that they are getting from the city territory.

West South Central States:—Two wholesalers in this section reported a 56.6 per cent increase for November over the corresponding month of last year, and a 7.5 per cent decrease from October of this year. December is expected to be the same or better.

Mountain States:—Three wholesalers in this section reported a 32.1 per cent increase over November of last year, and a 23.7 per cent decrease from October of this year. One expected December to be better, and the other two expected it to be about the same.

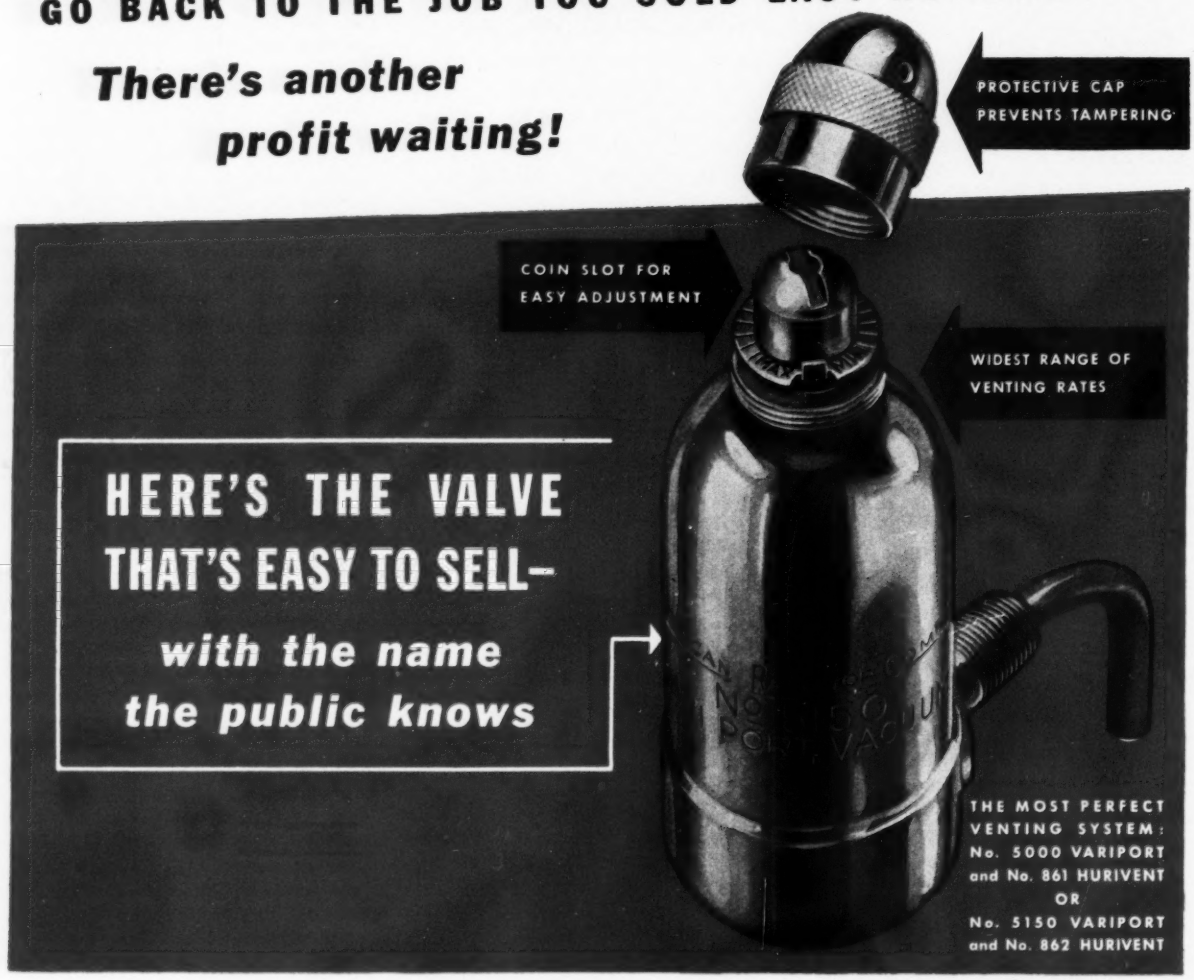
Pacific Coast States:—Four wholesalers reported an average increase of 26.6 per cent for November over the same month last year, and a 5.7 per cent decrease from October of this year. One expects December to be better, two expect it to be about the same, and one expects a decline. A Washington wholesaler reports that many PWA projects are being figured. A California wholesaler reports that the gross profit on soil pipe fittings, enameled ware, and pottery, is not sufficient to cover their overhead.

Air Conditioning

Forty-six utilities report 1,949 air conditioning installations with 51,738.93 horsepower for eleven months of 1935,

GO BACK TO THE JOB YOU SOLD LAST AUTUMN . . .

There's another profit waiting!


PROTECTIVE CAP PREVENTS TAMPERING
COIN SLOT FOR EASY ADJUSTMENT
WIDEST RANGE OF VENTING RATES
HERE'S THE VALVE THAT'S EASY TO SELL—
with the name the public knows
THE MOST PERFECT VENTING SYSTEM:
No. 5000 VARIPORT and No. 861 HURIVENT
OR
No. 5150 VARIPORT and No. 862 HURIVENT

the new IDEAL VARIPORT

Adjustable Vent for Balanced Heating

No. 5000 FOR STEAM • No. 5150 FOR VACUUM
FOR EVERY ONE-PIPE STEAM OR VACUUM SYSTEM

ARCO HURIVENT

quick vent for mains

A full half inch port vents air quickly from mains without leaking steam or water. It makes the main, in effect, part of the boiler header. Dry and noiseless. Order No. 861 for steam, No. 862 for vacuum systems.

HERE'S a new way to turn old customers into new profits. Every one-pipe steam job is a prospect now for this modern adjustable valve.

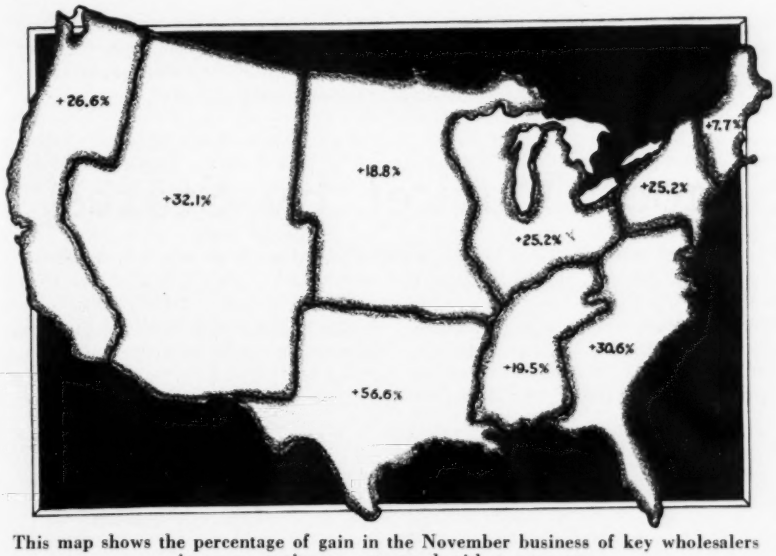
BALANCE THE JOB EASILY

By a simple adjustment, you can make the radiators near the boiler vent slowly, and the radiators farther away vent faster. Thus you can actually force the steam up the line to radiators hitherto hard to heat. Balance the job — and equal comfort in every room is a reality, with heat in every radiator. Ideal Variport Valves now make this possible through an infinite variety of port sizes and venting rates — a necessity for automatic heating and intermittent firing.

THE BEST KNOWN NAME IN HEATING

You'll find no sales resistance in selling Ideal Variport Valves. Each one carries the best known name in heating — a name your customer knows and trusts for good heating equipment. There are profits waiting for you now. Get posted. Get the details. Ask your jobber or write today.

ACCESSORIES DIVISION
AMERICAN RADIATOR COMPANY
40 W. 40th St., New York, N. Y.
Division of
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION



This map shows the percentage of gain in the November business of key wholesalers in every section as compared with a year ago

which compares with 1,465 installations and 45,100.37 horsepower for the twelve months of 1934. This is a 33.0 per cent increase in the number of installations and a 14.7 per cent increase in horsepower over the entire year of 1934.

Oil Burners

In the table, it will be noted that October oil burner shipments were 33,352 units. This was a 66.9 per cent increase over the corresponding month of 1934, and brought the ten months increase to 50.9 per cent over the same period in 1934.

Forty-eight cities reported 4,427 permits during November. This brought the eleven months total to 30,857. The November figure represented less than a normal seasonal decline, hence a larger increase over the previous year will probably be shown in November shipments.

Stokers

October shipments of Class 1, 2 and 3 stokers were 9,728 units. This was the largest number of stokers in these classes ever shipped in a single month. The gain over the corresponding month of last year was 70.3 per cent.

Since permits are issued only on larger stokers, the number of permits does not represent the total number of stokers sold in each territory. However, these figures do give some indication of the trend. Twenty-one cities reported 386 permits as compared with 518 in October. This decline of 28.9 per cent was considerably less than the normal seasonal decline. November shipments should, therefore, hold up in good shape.

Building Construction

As reported by the Department of Labor, a sharp gain featured building construction in October. Measured by the value of permits issued in the principal cities of the United States, residential construction, with a rise of more than 34 per cent over September, showed the greatest improvement. The value of permits for non-residential buildings and additions, alterations, and repairs to existing structures, however, also advanced. Moreover, the increases were shared by virtually all parts of the country. The value of all building construction for which permits were issued totaled $87,145,000 in October, as against $74,100,000 in September, a gain of 17.6 per cent.

Compared with a year ago, the value of buildings for which permits were issued during the month shows an increase of 78.1 per cent. The permit valuation for residential buildings, however, was nearly three times as great as in the same month of last year. The value of both residential and non-residential construction in October, 1935, was greater than in the corresponding month of any year since 1931.

During the first ten months of 1935 permits were issued for buildings valued at more than $674,000,000. This is an increase of over 64 per cent compared with the first ten months of the preceding year. Permits were issued during the first ten months of 1935 for residential buildings valued at $232,000,000, an increase of over 162 per cent in comparison with the corresponding period of 1934.

Metal Markets

(Prices as of Jan. 2, 1936)

New Metal Market: Domestic—Firm. Foreign—Strong.

Electrolytic Copper—9¼c, 9⅜c delivered Middle West.

Lead—$4.35, St. Louis.

Lead—$4.55, New York.

Ingot—5 lb.—$4.85, St. Louis.

Zinc—Dull—$4.85, St. Louis.

Tin—$48.25, New York.

Brass Ingot—85/5/5/5—9½c delivered.

Yellow Ingot—68/1/2/29—7¾c delivered.

Scrap Metal (Dealers Buying Prices)—

(Prices as of Dec. 11, 1935)

Composition and Steam Brass—$6.00 cwt.

Strictly Heavy Yellow Brass Scrap, Cast $4.50 cwt.

Mixed, Strictly Cocks & Faucets—$5.50 cwt. (Incl. ball cocks, etc.)

Light Brass, Tubes, Pipe, Old Sheets, etc.—$3.75 cwt.

Old Scrap Lead Pipe, etc.—$3.45 cwt.

Copper, Sheathing & Roofing, free of nails—$6.00 cwt.

Copper, Boiler, Tanks and other light materials—$6.25 cwt.

Soldered Joints—$11.00 cwt f. o. b. Chicago.

Block Tin—$44.00 cwt. f. o. b. Chicago.

ESTIMATED COST OF BUILDING CONSTRUCTION IN 753 IDENTICAL CITIES, SEPTEMBER AND OCTOBER, 1935

Geographic Division	New residential buildings (estimated cost) October 1935	Sep-tember 1935	Per-centage change	New nonresidential buildings (estimated cost) October 1935	Sep-tember 1935	Per-centage change	Additions, alterations and repairs (estimated cost) October 1935	Sep. tember 1935	Per-centage change	Total Construction (estimated cost) October 1935	Sep-tember 1935	Per-centage change
All Divisions ...	$34,372,492	$25,609,347	+34.2	$30,427,029	$27,936,287	+ 8.9	$22,345,201	$20,547,238	+ 8.8	$87,144,722	$74,092,872	+17.6
New England....	2,458,315	1,647,846	+49.2	1,399,139	1,529,253	— 8.5	2,203,673	1,657,314	+33.0	6,061,127	4,834,413	+25.4
Middle Atlantic..	10,851,575	7,510,709	+40.9	11,927,869	8,396,167	+42.1	8,037,413	7,146,458	+12.5	30,545,857	23,053,334	+32.5
East No. Central.	8,009,220	4,775,944	+67.7	7,728,474	4,391,380	+76.0	3,582,712	3,491,728	+ 2.6	19,320,406	12,659,052	+52.6
West No. Central	1,650,621	1,868,023	—11.6	1,035,591	4,450,340	—76.7	1,110,966	1,310,769	—15.2	3,797,178	7,629,132	—50.2
South Atlantic...	3,814,495	3,715,467	+ 2.7	2,675,545	3,805,118	—29.7	2,548,591	2,006,493	+27.0	9,038,631	9,527,078	— 5.1
East So. Central.	862,624	405,610	+112.7	674,421	547,303	+23.2	803,989	475,021	+69.3	2,341,034	1,427,934	+63.9
West So. Central	2,000,805	1,353,032	+47.9	2,227,157	2,354,226	+ 5.4	824,193	1,335,190	—38.3	5,052,155	5,042,448	+ 0.2
Mountain	699,677	672,715	+ 4.0	541,513	208,935	+159.2	394,022	581,144	+32.2	1,635,212	1,462,794	+11.8
Pacific	4,295,160	3,660,001	+17.4	2,217,320	2,253,565	— 1.6	2,840,642	2,543,121	+11.7	9,353,122	8,456,687	+10.6

Housing Needs

- *More than half billion dollars worth of plumbing and heating equipment involved in housing shortage, Bureau of Census estimates*

Over six billion dollars of expenditures are needed to meet the present housing shortage, according to data from various sources assembled and analyzed by the building materials section of the Bureau of Mines, Department of the Interior. Such an expenditure would create a demand for about three billion dollars worth of materials and necessitate an outlay to direct labor of around one and three-quarter billions. In breaking down the total material supply bill, the Bureau of Census estimates that the proportionate expenditures for plumbing and gas fitting equipment would be $366,000,000, and for heating and ventilating equipment $252,000,000, a total of $618,000,000.

Million Short

The Bureau points out that notwithstanding the depression, 800,000 houses were built from the beginning of 1930 to the middle of 1935. This, however, falls over a million short of the number required to provide for the increased number of families, and an additional 550,000 units will be needed to meet the losses through obsolescence and destruction by fire, flood, or storm. As the average cost of American homes recently built is about $3,800, the deferred building-budget that must be spent to remedy the present doubling up of families and restore the predepression ratio of homes to population adds up to fully $6,440,000,000.

Farm Market

- *Returning prosperity makes farmer good prospect for repairs and replacements*

The American farmer is once again a prosperous individual, according to the Bureau of Agricultural Economics Estimates, which recently has made public its annual agricultural outlook report. It showed that United States farmers will receive approximately $6,800,000,000 in gross cash income for the calendar year 1935. The report also paints an optimistic picture for the year 1936, not only in farming but in industry generally.

With an estimated farm need of one billion dollars for replacement and repair, this news holds considerable importance for the plumbing and heating contractor.

During the winter the farmer has an opportunity to have made many seasonal repairs, to have installed a heating plant or water and bath facilities, all of which mean sales opportunities for the contractor-dealer.

School Market by States

- *Table shows where federal allotments for new school construction in 1936 will be spent*

In connection with the huge amount of new school construction to be undertaken in 1936 by means of federal allotments under PWA, *The American School Board Journal* has compiled the following analysis of federal financing of school projects to indicate how it will be distributed by States:

State	Loans		No. Proj.	Total Cost
Alabama	$ 1,018,500	$ 2,259,562	173	$ 5,006,023
Arizona	295,500	241,771	15	537,271
Arkansas	532,000	435,272	15	967,272
California	1,935,514	3,566,446	106	8,026,413
Colorado	292,600	952,379	27	2,070,299
Connecticut	.....	2,254,692	33	5,007,578
Delaware	.....	33,867	1	75,260
Dist. Col.	.....	.....	...	.....
Florida	1,117,000	1,014,761	33	2,345,132
Georgia	382,363	1,615,183	79	3,579,866
Idaho	64,000	373,562	10	830,138
Illinois	4,959,500	6,273,279	65	16,307,461
Indiana	274,378	4,142,523	108	9,140,258
Iowa	248,000	1,954,249	90	4,348,215
Kansas	73,000	829,247	29	1,841,237
Kentucky	1,938,667	1,937,679	77	4,253,512
Louisiana	.....	.....	...	.....
Maine	223,500	409,119	12	909,111
Maryland	.....	657,408	16	1,460,907
Massachusetts	.....	5,970,650	72	13,325,150
Michigan	2,118,000	2,868,999	61	6,560,716
Minnesota	253,509	2,321,345	63	5,226,389
Mississippi	1,958,347	1,669,144	81	3,716,980
Missouri	249,000	814,889	23	1,800,577
Montana	37,000	228,789	7	501,889
Nebraska	336,500	1,252,475	50	2,783,110
Nevada	48,273	75,504	6	161,727
New Hampshire	87,336	564,216	10	1,289,008
New Jersey	4,170,954	3,792,736	33	8,647,995
New Mexico	197,000	373,600	8	883,554
New York	4,006,000	13,440,111	122	29,862,118
North Carolina	1,435,000	1,755,964	161	3,894,672
North Dakota	488,400	461,247	20	1,030,829
Ohio	2,161,600	4,889,975	104	10,857,318
Oklahoma	1,428,600	1,870,923	21	4,170,133
Oregon	849,500	1,680,549	38	3,688,029
Pennsylvania	5,199,240	13,294,493	214	29,661,059
Rhode Island	.....	564,237	6	1,253,864
South Carolina	1,307,500	1,604,756	64	3,558,490
South Dakota	870,100	819,349	33	1,820,782
Tennessee	1,643,222	1,785,684	89	3,974,358
Texas	2,667,945	3,628,639	170	7,918,536
Utah	.....	556,900	32	1,238,000
Vermont	77,819	152,967	5	350,636
Virginia	103,000	854,538	26	1,907,862
Washington	.....	1,772,762	48	4,645,043
West Virginia	489,000	463,154	8	1,016,982
Wisconsin	58,000	1,154,223	46	2,584,011
Wyoming	75,750	70,977	4	157,727
Alaska	22,000	42,000	2	97,000
Total	$45,693,117	$99,746,794	2516	$221,711,631

Good News

"With building and rehabilitation gaining momentum rapidly during the last quarter of 1935 under the stimulus of FHA, the sales of building materials made from copper and its alloys far exceeded those of any year since the depression was first felt. The copper and brass industry believes that the volume of business in the building field during 1936 will more than double that of 1935."

Bertram B. Caddle, secretary,
Copper & Brass Research Assn.,
New York City.

* * *

"Our company has made a 15 per cent addition to its working force. This is not a flash in the pan, but a general pickup. After my Western trip I find business definitely better."

Bernard Lee, vice president,
Jenkins Bros. Co., Bridgeport, Conn.

* * *

News Note—"C. E. Ekstrom, Kansas City plumbing and heating contractor, has moved to a new location at 6219 Oak St., where the firm has a larger shop and a very modern and attractive showroom."

* * *

"We have just opened a new showroom. Prospects are very encouraging for future business."

F. M. McKinley,
Reichle Supply Co., Saginaw, Mich.

* * *

"Orders in hand and confidential reports from field agents show a definite upward swing in our business prospects for 1936. Also, 1935 business will show a satisfactory position on our business chart."

Watts Regulator Co.,
Lawrence, Mass.

News Note: "An increase in sales of plumbing fixtures and supplies from $27,000 to $70,000, 80 per cent of which has been financed under the modernization credit plan, is reported by Carl Molling of the Coronado Plumbing and Heating Company of Tucson, Arizona. During the past few years only five men have been employed by the company but now there are 22 on the payroll."

* * *

"Prospects for the air conditioning industry in 1936 are more optimistic than ever before. The natural growth of this young industry and the great increase in new building and modernization activities have combined in 1935 to result in the largest volume of sales of air conditioning equipment ever recorded in one year. With an even greater advance in these activities foreseen for 1936, we can logically anticipate a similarly increased acceptance for air conditioning."

J. J. Donovan, manager,
air conditioning department,
General Electric Co., Bloomfield, N. J.

* * *

News Note—"Mueller Brass Co., Port Huron, Mich., is starting reconstruction of an old building, making it into a new steel and concrete unit which will permit extension of melting and casting work. Approximately $22,500 will be spent for the building and for new equipment, it is stated by O. B. Mueller, president."

* * *

"On Nov. 1 we opened a branch at 460 Federal St., Youngstown, O. The new branch has a complete show room in connection."

Trumbull Plumbing Supply Co.,
Warren, O.

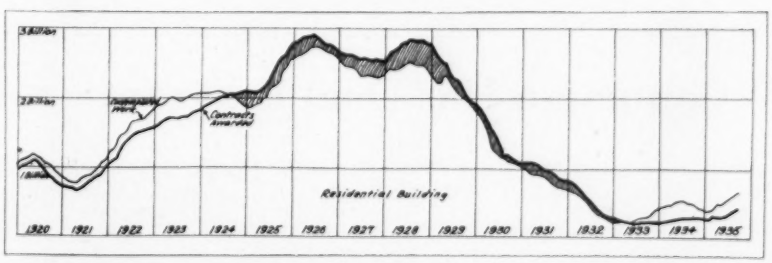


Chart showing relationship between contemplated residential building and contracts awarded. It is pointed out by F. W. Dodge Corp., statistical organization which constructed this chart, that the relative volumes of plans and of contracts have reverted at this time to the positions they had at the beginning of the fifteen year period

News Note: "That the volume of business in the air conditioning industry in 1936 will substantially top the record-breaking year of 1935 is the prediction of William B. Henderson, executive vice president of the Air Conditioning Manufacturers' Assn. He stated that while final figures are not yet available for the year just closed, tentative figures indicate that the 1935 dollar volume of air conditioning equipment was at least 80 per cent greater than in 1934. 1935 saw the American public pay over $35,000,000 for air conditioning equipment."

* * *

News Note—"Production figures just compiled by Reif-Rexoil, Inc., Buffalo, N. Y., reveal an increase of 214 per cent for 1935 over 1934. This represents a new all-time high for the company. It has been determined that about 27 per cent of the increase can be directly attributed to FHA influence."

* * *

"We have recently completed a large addition to our plant and reports from all our territories indicate beyond doubt that we shall need these greatly increased production facilities to meet the demands of aggressive dealers who are seeking a share in the profits which are to be derived from the sale of automatic heating."

R. C. Goddard, president,
Combustioneer, Inc., Springfield, O.

* * *

"Demand has necessitated the removal of our entire plant to new and more commodious quarters at 17325 Euclid Ave. Our production facilities are increased—our organization is enlarged."

Parker Appliance Co.,
Cleveland, O.

* * *

"We have recently moved to larger quarters at 247-249 Third Ave., where we have about three times as much space as previously. A line of air conditioning equipment has been taken on."

Samuel Levine,
New York City.

* * *

"Business is more than holding its own. There are more prospects for new homes in this territory than we have seen in three years."

Lehigh Valley Supply Co.,
Allentown, Pa.

* * *

News Note—"Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., is understood to be planning the installation of electric power equipment in a new six-story addition at an estimated cost of $200,000."

Wholesale

News of Men . . . Meetings . . . Companies . . .

Radiator Campaign

- *Broad cooperative, promotional program which will emphasize advantages of radiator heat to both the industry and the consumer adopted at Chicago meeting*

A broad educational campaign to emphasize the advantages of radiator heating has been launched by manufacturers and contractors. The object of the campaign is to mobilize the entire radiator heating industry as well as interests associated with it in a comprehensive promotional program.

The program includes the preparation of a sales manual, the organization of local sales schools, promotional work with architects and builders, and consumer publicity in newspapers and magazines.

Committees Appointed

The initial step in the launching of the campaign was taken at a meeting of representative members of the radiator heating industry held at the Palmer House, Chicago, on Oct. 23. Following this meeting a finance committee and a program committee were appointed. A meeting of the program committee was held at the Hotel Sherman in Chicago on Nov. 18. Members of the finance committee held an organization meeting at the Hotel Sherman on Dec. 20 at which Martin Weil, vice president of the Weil-McLain Co., Chicago, was elected chairman and treasurer.

In addition to Mr. Weil, the following attended the meeting of the finance committee: H. N. Booth, vice president of the United States Radiator Corp., Detroit; Chas. K. Foster, executive vice president of the American Radiator Co., Chicago; C. V. Haynes, vice president of the Hoffman Specialty Co., New York; J. Lawrence DeNeille, president of the Heating, Piping, and Air Conditioning Contractors National Assn., St. Louis; Russell G. Creviston, manager of advertising and sales promotion, Crane Co., Chicago; Ray Berry, president of the Chicago Master Steam Fitters Assn.; and Jos. C. Fitts, secretary of the Heating, Piping, and Air Conditioning Contractors National Assn., New York.

The responsibility for creating the materials to carry out the purpose of the campaign has been placed in the hands of a program committee. This committee includes Mr. Fitts as chairman; Mr. Creviston; Louis T. Braun, secretary of the Chicago Master Steam Fitters Assn.; Charles L. Crouse, vice president of the National Radiator Corp., Johnstown, Pennsylvania; Samuel L. Haas, president of the Advance Heating Co., Chicago; A. R. Herske, vice president of the American Radiator Co., New York; James C. Matchett, vice president of the Illinois Engineering Co., Chicago; C. G. Newton, vice president of the Stevens-Root Co., Chicago; Norman J. Radder, secretary of the Plumbing and Heating Industries Bureau, Chicago; and John H. Zink, vice president of the Heating, Piping, and Air Conditioning Contractors National Assn., Baltimore.

The program committee at its meeting in Chicago on Nov. 18 selected a sub-committee on copy consisting of Mr. Fitts; Mr. Creviston; Mr. Weil; Marshall Adams, director of sales promotion of the American Radiator Co., New York; and Guy Hutchinson, vice president of the Hoffman Specialty Co., New York.

In a statement outlining the objects of the campaign, Mr. DeNeille declared that it "marks the beginning of a significant cooperative movement by manufacturers and contractors. Our purpose is to sell the advantages of radiator heating," Mr. DeNeille declared. "The need for calling the attention of architects, builders, and the public to the advantages of radiator heating is unquestioned. Equally important is our plan to re-sell the industry on its own product.

First Step

"Our first step will be to get the fundamental and outstanding advantages of radiator heating prominently before everyone in the industry. This will be done by means of a master prospectus which will be prepared under the direction of our program committee. When this is available, we will hold local sales schools to be attended by contractors, manufacturers, and wholesalers.

"By means of our master prospectus and our sales schools, we will get uniformity in our sales story. The result will be that, when a prospect is approached by different representatives

Campaign Has Dual Program:

1. *Educational work within the industry, which will include preparation of a sales manual and organization of sales schools to be attended by contractors, wholesalers and manufacturers.*
2. *Educational work outside of the industry, which will call the attention of architects, builders and consumers to the advantages of radiator heating.*

of the radiator heating industry, he will get the same story from each man.

"Every cooperating manufacturer, too, will in his own literature reflect the common purposes of the campaign. Just as the florists in their advertising reiterate the slogan, 'Say It With Flowers,' so we in all of our booklets, advertisements, and consumer literature will stress certain outstanding advantages of radiator heating."

Mr. DeNeille also pointed out the fact that the publicity which will be given to the relation of heating to air conditioning will have the effect of protecting the public against misrepresentation and misunderstanding.

Educational Work

Sponsors of the campaign emphasize the dual character of its educational work:

1. Educational work within the industry, such as the preparation of the major prospectus, the holding of sales schools, and the focusing of the attention of the industry on the outstanding advantages of radiator heating and a uniform method of presenting the story.

2. Educational work outside of the industry. This will be carried out through mailing pieces directed to architects and builders. Literature on the advantages of radiator heating will be mailed to new home builders.

Newspaper and magazine publicity emphasizing the advantages of radiator heating and tying in with the campaign will be prepared and distributed by the Plumbing and Heating Industries Bureau. The program will be introduced in Chicago with a series of sales schools for members of the industry. It will be carried on nationally by the National Bureau of Heating and Air Conditioning which will be organized and incorporated.

Sales Honored

- *Members of the plumbing and heating industry in Detroit area give testimonial dinner*

In honor of the seventieth birthday of Murray W. Sales, and in recognition of his distinguished career in the plumbing and heating industry, a testimonial and birthday dinner was given by members of the industry in Detroit and vicinity on Nov. 21 at the Detroit-Leland Hotel. The dinner also marked the fortieth anniversary of the Murray W. Sales Co., one of the pioneer wholesaling concerns in Detroit.

Toastmaster for the occasion was Malcolm H. Bingay, managing editorial director, *Detroit Free Press*. Speakers on the program included: N. C. Reed, assistant general manager of sales, Wheeling Steel Corp.; C. K. Foster, vice president, American Radiator Co.; H. F. Beglen, vice president, Standard Sanitary Mfg. Co.; Walter H. Kuhns, president, Kuhns Brothers Co.; Brooks Nichols, vice president, United States Radiator Corp.; C. W. Watson, sales manager, Detroit Brass & Malleable Works; F. S. Lorne, president, Lorne Plumbing & Heating Co.; R. L. Spitzley, president, R. L. Spitzley Heating Co.

In honor of the occasion, and printed on the program, was a poem written especially for Mr. Sales "on the occasion of his seventieth birthday" by Edgar A. Guest. It was prepared by Mr. Guest in California and sent on by him for the dinner. The poem reads:

Is Murray seventy? Sakes alive!
I know some men at forty-five
Who by their growling seem to be
Already older men than he.
For seventy years of winter gales
Have left no mark on Murray Sales.
If Murray's seventy as I'm told
Then not by years do men grow old.
If old age be the fruit of care
Of heartache Murray's had his share
And yet he bids us laugh as though
He'd never felt the touch of woe.

Brave, blithe, courageous friend of mine
Would I could pen one gifted line
By which the whole wide world could see
How much your friendship means to me!
Would I could come through care and tears
And be so young at seventy years!

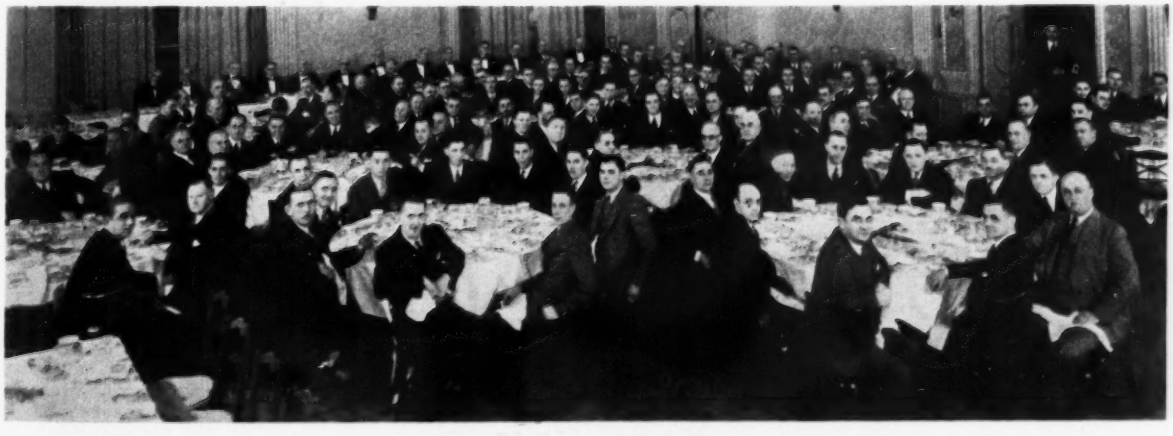
The arrangement committee for the dinner consisted of: Ray L. Spitzley, chairman, Robert Coulton, Edward M. Harrigan, C. H. Deane, L. E. Walsh and William Hughes.

Joint Meeting

- *Texas wholesalers and manufacturers of plumbing and heating materials assemble in Austin*

Designated as a joint meeting for manufacturers and wholesalers of plumbing and heating materials, the Wholesale Distributors Assn. of Texas held its regular quarterly sessions at the Stephen F. Austin Hotel, Austin, Tex., on Dec. 13-14. Despite the fact that the meeting was held at an inopportune time of the year, there was practically 100 per cent attendance on the part of plumbing and heating wholesalers and a good representation of manufacturers. The general theme of the meeting was distribution.

One of the principal speakers was O. A. Kroos, secretary and treasurer of



At the testimonial dinner given in honor of Murray W. Sales on the anniversary of his seventieth birthday by members of the plumbing and heating industry of Detroit and vicinity

Kohler Co., who pointed out the importance of the State of Texas in the national market for plumbing and heating goods; the changes in this market during the past seven years, and their effect on the employment situation; and factors in connection with the established system of distribution.

He was followed by Harry Beglen, vice president of Standard Sanitary Mfg. Co., who outlined the duties of a manufacturer to a wholesaler, and likewise of a wholesaler to a manufacturer. Another speaker was R. G. Fensch of Humphrey Mfg. Co. who emphasized the importance of selling merchandise and selling it at a profit.

Dunlay Elected

At a meeting of the board of directors, C. A. Dunlay, Dunlay-Armand Co., Houston, was elected chairman of the board and member of the executive committee. He will serve along with J. M. Axtell, Axtell Co., Fort Worth, and D. S. Burks, Standard Sanitary Mfg. Co., Houston.

An open session was held the second afternoon at which the meeting was thrown open for general discussion. At this time the chairmen of the various divisions of the association were given high commendation for their work. The present chairmen are: I. L. Nihell, Standard Sanitary Mfg. Co., Dallas, plumbing and heating division; H. S. Hutchins, Jr., Axtell Co., Fort Worth, pipe, valves and fittings division; C. C. Krueger, San Antonio Machine and Supply Co., San Antonio, industrial mill supply division; John Maxwell, Maxwell Steel Co., Fort Worth, sheet metal division; and J. M. Axtell, Axtell Co., Fort Worth, water well division.

Building Prospects

- *Wide interest aroused by talk before Associated Business Paper publishers—Strengthening of established channels of distribution by depression is pointed out*

Hundreds of leaders in sales and sales promotion attended the business clinic and banquet given by Associated Business Papers, Inc., in New York City on Dec. 2. DOMESTIC ENGINEERING is the plumbing and heating publication which is a member of that organization.

The meeting, which took place just as the December issue of DOMESTIC ENGINEERING was going to press, brought out as a major feature of its program the discussion by Rolland J. Hamilton, president of American Radiator Co., of "What's Ahead in Building?" His remarks were given rather fully in the December report.

In leading the discussion of this address, R. V. Sawhill, executive vice-president at New York of DOMESTIC ENGINEERING, stated, "I feel that Mr. Hamilton in his excellent paper has placed all of us under obligation through refusing the tempting prospect of painting buildings' immediate future in too glowing terms. Certainly building prospects look better. The prospects are not only promising, but present business statistics are shoring up that rising curve which everyone had anticipated so long that we had almost given up expecting it.

"Probably all of us have seen the more satisfying records. Private orders are rapidly picking up, although the ground to be recovered before we cross the line of normal is still great. All industry, many of whose principal branches dropped to ten to twelve per cent of normal, can make huge proportionate gains and still have a long way to go.

"The future of building in this country will be greatly influenced by the lessons learned in the past six years. It is quite possible that many of us will enjoy more quickly new standards of home comfort at less cost than would have been true without the depression. If that proves true, then historians may easily classify this stride forward in home owning and living standards as a residual benefit offsetting part of the recent wastage.

Reasons for Optimism

"Some of the factors which justify this expectancy of better homes for more of us are better financing, lower costs both initially and as a carrying charge, exceptional technical improvements, the appearance in the small home field of many strongly financed companies and, a fact to which little attention has been drawn, the education in distribution which manufacturers, wholesalers and dealers have received in the rapid and ruthless period of trial and error from which we are now emerging. . . .

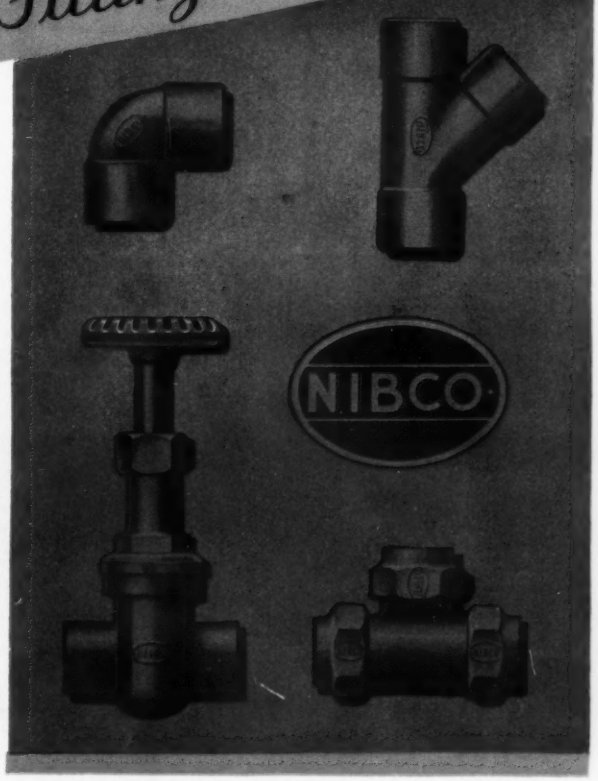
"In some branches of this industry, the depression has had the effect of re-

Many of industry's sales and sales promotion leaders were present at the business clinic and banquet given by Associated Business Papers, Inc., in New York City. A number of officials connected with the plumbing and heating industry may be readily located in this photograph, including: Adolph Mueller, president, Mueller Co., Decatur, Ill.; A. R. Herske, vice president in charge of sales, American Radiator Co.; A. M. Behrer, New York City wholesaler; Paul K. Addams, assistant manager of general sales, Fitzgibbons Boiler Co.; Joseph R. Murphy, vice president, Taco Heaters, Inc.; Walter Stevens, sales manager, Walworth Co.; J. M. High, manager insulation department, Ruberoid Co.; A. T. Ofstie, American Radiator Co.; C. H. Hall, assistant manager insulation department, Johns-Manville; and R. V. Sawhill and H. J. Carr, DOMESTIC ENGINEERING.

How Far Would You Get *Selling Fixtures Like These* Today?

A plumber who attempted to sell this 1888 bath room to a 1936 home owner would have a hopeless task. It is the modern plumber—the one who offers the latest in fixtures, colors and convenience—who gets the business. Recognizing this fact, wise plumbers everywhere are using copper plumbing as a selling argument to get more business. For copper plumbing is not only modern but it is worth to the home owner many times the small cost differential it involves.

Be Modern! USE COPPER AND *Fittings by Nibco*



Freedom from rust is only one of the advantages offered by copper plumbing. Copper tubes carry hot water from heater to bath room with less heat loss—a definite saving in fuel. Drains of copper clog less readily, either from congealed grease or from hair and lint. For the piping of hot water or steam heating systems, copper tubes are far more efficient than pipe of other materials.

Nibco is ready to tell you the whole interesting story. More than that, we will furnish effective sales literature which you can send or give to your plumbing prospects. In addition, the materials and instructions for an effective set of sales demonstrations will be supplied upon request.

Nibco pioneered the use of copper for interior plumbing. "Fittings by Nibco" are the choice of plumbers who take pride in quality work.

NORTHERN INDIANA BRASS COMPANY
ELKHART, INDIANA

establishing old channels of distribution. It is of real significance that these channels had lately been accepted largely on tolerance and tradition; that during the first years of the depression, active search was made in many cases for other lines of distribution and yet those old channels have come through this test in a stronger position. From our observation this is particularly true with mechanical units requiring assembly and fabrication as well as some measure of local guarantee of operating performance. With this class of domestic units, the position of the established wholesaler and the established contractor-dealer is stronger. And incidentally, his strength is due in considerable measure to the improved efficiency with which these sales units are now functioning."

New Business Census

Another speaker at the business clinic was Virgil D. Reed, chief, wholesale and retail trade, Bureau of Census, who spoke on "How Can We Improve the Census of Business?"

"The Census Bureau is now beginning a census which will involve the canvassing of more than 3,500,000 business establishments," said Mr. Reed. "Enumerators will start Jan. 2.

"The purpose of the census is to provide a statistical measurement of various fields of business, other than production. It will provide complete and basic data for the extensive field of business not included in the comparatively limited fields of manufacturing and distribution embraced in existing census statistics, or otherwise obtainable. It is a continuation and enlargement of both the Census of Distribution for 1929 and the Census of American Business in 1933.

Scope of Census

"Whereas the first Census was limited primarily to the distribution field, and the second was limited to distribution, service businesses, amusement enterprises and hotels, the 1935 Census of Business will cover the following fields: retail trade; wholesale trade; insurance (carriers, agents and brokers); real estate, agents and brokers; construction; banking, finance; business services; broadcasting; advertising agencies; hotels; amusements; distribution of manufacturers' sales (channels of primary distribution); trucking, warehousing; bus transportation; and operation of non-residential buildings.

"With the broader field covered this year, the Bureau will be better able to supply business men with the answer to the question of how many concerns there are in business, the total volume of business done in this country annually, and the total payrolls and employment in the various lines of business endeavor."

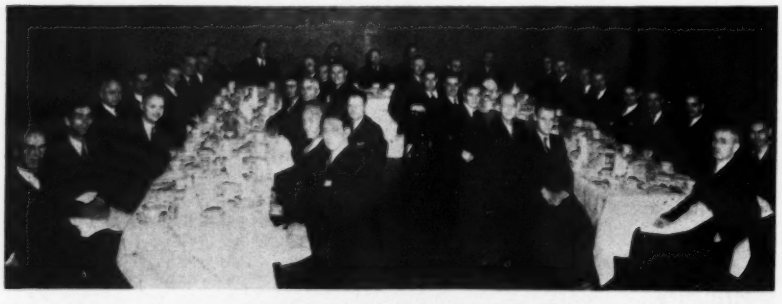
Sales Meeting

● *Silent Glow factory representatives gather in Hartford*

Thirty-five factory representatives of the Silent Glow Oil Burner Corp., Hartford, Conn., gathered from all sections of the country to attend a two-day general sales meeting held by the company at its Hartford plant on Dec. 20 and 21. At the meeting the company's newly designed oil burner was unveiled for the first time.

After being welcomed by Ross Sherman, president, and E. M. Pattison, vice president and general sales manager, the men studied in detail the operation and design of the burner and became familiar with its sales features. Included in the meeting were school sessions, held the second day, at which time each factory man went through a series of examinations. It is stated that the new burner represents something of a departure from conventional designs.

At the close of the sessions a banquet was held, at which President Sherman awarded Thos. B. Buckley of Brockton, Mass., a trip to Havana, which was the first prize in the company's 1935 sales contest. Harold Swenson, Medford, Mass., winner of second prize, received a trip to Bermuda. A dozen cash awards were also made.



Group picture taken at two-day general sales meeting of Silent Glow Oil Burner Corp. factory representatives held in Hartford, Conn.

Wedding

● *C. B. Nash leaves for Europe to attend daughter's nuptials*

Charles B. Nash, vice president of the Standard Sanitary Manufacturing Co., accompanied by his wife, sailed for

Mrs. C. G. Smallwood

Europe on the S.S. Washington, Dec. 14, to attend the wedding of his daughter, Mary Jane, which took place in

Charles B. Nash

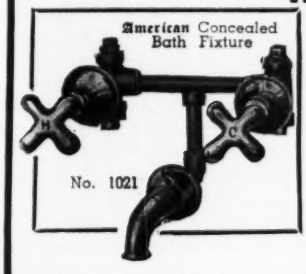
London during the Christmas holidays. Miss Nash became the wife of Gerald Graham Smallwood of London, England, and Kenya Colony, East Africa.

Miss Nash is a graduate of Seton Hall, Greensburg, Pa., and the Parsons School of Fine Arts, New York and Paris, and has studied art in Paris and London. Mr. Smallwood is an engineering graduate of Christ College, Oxford, and has been engaged in mining in East Africa for several years.

After their honeymoon, which is being spent at Kitzbuhl in the Austrian Tyrol, the couple will make their home in Kakamega, Kenya Colony, East Africa.

Mr. and Mrs. Nash plan to return to this country the early part of this month.

American BRASS GOODS FOR THE AMERICAN HOME!



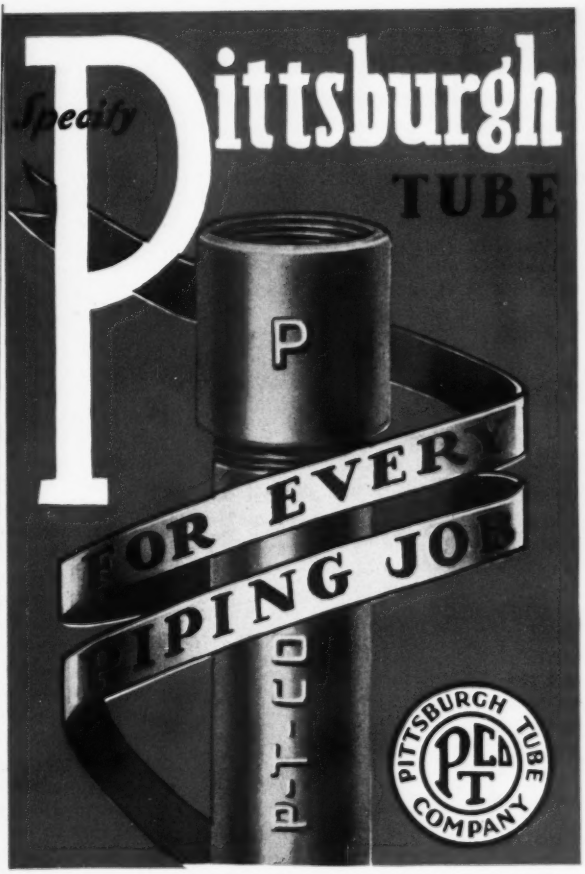
☆GRADUALLY . . . but surely . . . the American homeowner has come to recognize the utter folly of buying goods of questionable merit.

He has been educated to want and to buy the better things in life. The plumbing requirements of his home are no exception and he's not going to content himself with fixtures that are not the best.

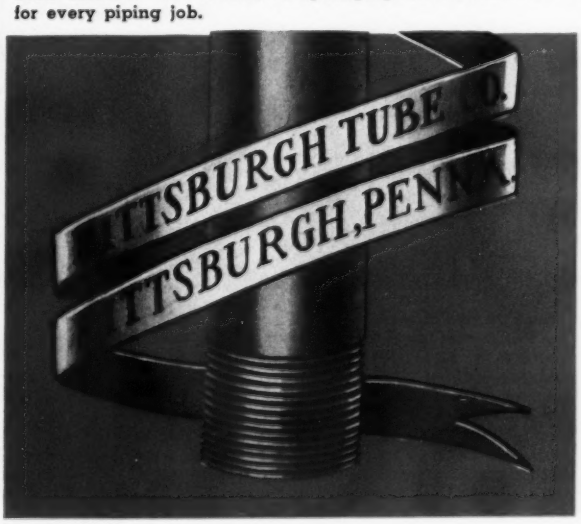
This situation is made-to-order for **American** Brass Goods. For more than a quarter century the name **American** on plumbing equipment has been the homeowner's assurance . . . and the plumber's . . . that these products were the highest grade obtainable. The American home of today needs these better **American** Brass Goods. You'll find it advantageous . . . and decidedly profitable . . . to specify **American** Brass Goods exclusively. Order them from your jobber.

American SANITARY MFG. CO.
ABINGDON ILLINOIS

☆



Before you select the pipe for your next plumbing or heating job, ask yourself these questions: Will it provide the dependable, trouble-free service to which my customers are entitled? Is its quality uniformly high? Can I trust its lengths to be straight and true? Can I rely on its being consistently full weight and full size? Will it cut easily? Will it bend readily? Will it thread cleanly and accurately? Are the couplings heavy and serviceable enough? Will it meet the most rigid requirements of the job in hand? Because no comparable pipe meets those specifications more satisfactorily than that produced by PITTSBURGH TUBE, countless plumbing and heating men have discovered the wisdom of standardizing on this better wrought steel pipe. Once you've used it you, too, will soon discover the wisdom of specifying PITTSBURGH TUBE for every piping job.



Distribution

- *Southern wholesalers hear Guy Hutchinson on subject of manufacturer - wholesaler relations*

The obligation of the wholesaler to his source of supply and of the manufacturer to his distributor was discussed by Guy Hutchinson, vice president and sales manager, Hoffman Specialty Co., in an address before the fall meeting of the Southern Wholesalers' Assn. held recently in Atlanta, Ga. One of the features of Mr. Hutchinson's talk was an enumeration of these obligations.

In his discussion Mr. Hutchinson stated that the economic conditions which have existed during the past few years have influenced some manufacturers to become lax in their sales policies due to the fact that in many cases they have been fighting for their economic lives. These conditions, in his opinion, are fast disappearing and he said that in the new order manufacturers who have selected wholesalers as their channel of distribution have a solemn obligation to support wholesalers to the limit of their ability, because after all they are partners in the same distribution system.

Obligations

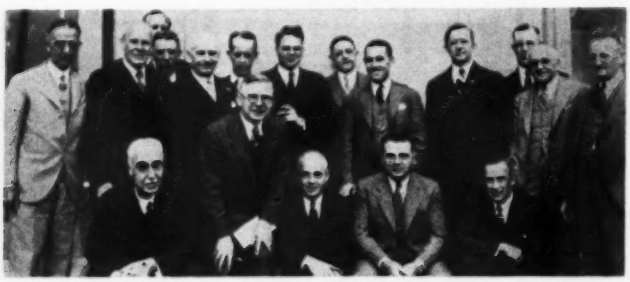
Mr. Hutchinson enumerated manufacturers' obligations to wholesalers as follows: the development of improved products; adequate sales promotion; assistance in stimulating wholesalers' turn-over; adequate profit spread to amply reward wholesalers for the distribution services performed; and the establishment, where possible, of a resale price policy so that this profit spread may be maintained.

He listed wholesalers' obligations as: loyalty to the manufacturer and aggressiveness in his representation; education of his trade to use the manufacturers' products, particularly newly developed ones; proper financing and organization; furnishing manufacturers with adequate stocking and distribution services; appreciation that quality merchandise can secure a preference price-wise; education of sales force to sell on value rather than on price; and selection of merchandise lines with due appreciation of their marketability and the sales policy of the producer.

Another speaker at the meeting was Robert Strickland, executive vice president of the Trust Company of Georgia, Atlanta, Ga., who spoke on the opportunities of the building industry. He stated that in his opinion prospects for this industry in the next few years are particularly bright. The factors cited by Mr. Strickland as insuring a return to prosperity in the building industry are: the availability of credit for new construction; increased modernization; replacement of obsolete structures; a demand for new housing; and the fact that the past few years have brought about a greater appreciation of homes on the part of the American people, and therefore a desire to own better homes.

Mr. Strickland warned that a present threat is too rapid credit expansion.

A section of the new display rooms of Hajoca Corp., Philadelphia



Group picture of some of the officials of Hajoca Corp. Left to right: front row, Chas. A. White, vice president; A. J. Phillips, advertising manager; J. B. Ryan, manager, Camden, N. J., branch; J. E. Weiss, manager of Allentown, Pa., branch; Gordon Fleu, sales department, Bethlehem, Pa. Back row: J. Harvey Borton, chairman, board of directors; Benjamin Cadbury, secretary; Lloyd Akerbloom (partly hidden), oil burner division; Wm. F. Lodge, architects' representative; George E. Bridgeman, vice president; Vance Hazzard, manager, Lansdale, Pa., branch; R. D. Watson, manager, Washington, D. C., branch; Harry Eldridge, sheet metal department; J. R. Trimble, manager, Bethlehem branch; Wm. A. Brecht, president; F. W. Fisher, purchasing agent; Frank Eichfeldt, vice president; and H. L. Freed, in charge of iron foundry

Hajoca Showroom

A new showroom, which covers 8200 sq. ft. and shows recent developments in the plumbing and heating field arranged so that the contractor and the customer can visualize readily how they would appear in the home, has been opened by Hajoca Corp., Philadelphia. Heating boilers, water heaters, showers, laundry tubs, kitchen sinks, oil burners, gas ranges and the like are all on display. Many of these appliances and devices are maintained here in operation.

Over 1200 Attend

During the opening week of Dec. 9 the new showroom was viewed by plumbing and heating contractors from various parts of Pennsylvania, New Jersey, Delaware and Maryland, as well as architects, engineers and Hajoca branch managers. In all, more than 1200 attended during the opening week of the showroom.

Benj. Cadbury, secretary of the Hajoca Corp., Wm. F. Lodge and Miss Verrel Elliott are in charge of the new sales room.

Sponsors Banquet

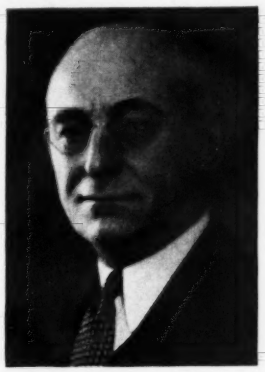
Approximately 100 master plumbers of York city and county attended a banquet and meeting held in Bierman's restaurant in that city on Dec. 10. The meeting was sponsored by P. A. and S. Small Co., Inc. Mayor Harry B. Anstine of York opened the meeting with an address. Other speakers included George Small, president of the Small company; D. J. Quinn, manager of the Philadelphia plant of the Standard Sanitary Mfg. Co., who explained various ways of selling plumbing fixtures; and C. J. Snodgrass, representative of the Standard company.

Motion pictures showing the casting of iron metal plumbing fixtures and also the molding and glazing of the porcelain plumbing fixtures at Standard Sanitary plants were explained by K. E. Miller of that concern.

Research

- *Crane Co. establishes separate division to devote full time to research and development work*

Another indication of the current forward march of the plumbing and heating industry toward new and improved products is contained in the announcement which has just been made by Crane Co., Chicago, of the establish-



M. W. Link

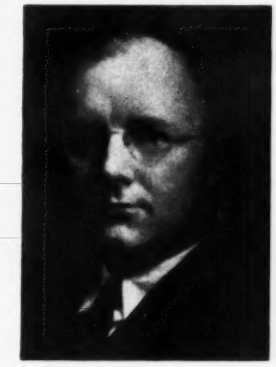
ment of a division of research and development. In commenting on the new division the company points out that it feels that the importance and volume of research and development work warrants the constant full time effort of a group of technical specialists entirely divorced from routine production. These men will devote their entire time to a study of the requirements of the trade and will be free to pursue the research designing and experimental work necessary to improve existing products, and to develop original designs and materials for new products.

The research and development work formerly handled by various departments and subsidiaries will be expanded and centralized in the new division, which will be responsible directly to the president, with the vice president of manufacture and the vice president of sales acting in a coordinating capacity.

M. W. Link has been appointed director of the new division, and B. A. Parks will be assistant director. R. H. Zinkil, research engineer, will be in direct charge of plumbing products, and C. A. Olson will devote his time to the field of heating.

Leland Promotion

Promotion of E. B. George to the capacity of general manager has been announced by the Leland Electric Co., Dayton, O. Mr. George has been in turn sales engineer, sales manager and vice president of the company over a period of eleven years and has an unusual background in the electric motor world. He is an electrical en-



E. B. George

gineering graduate of Purdue University and his past experience includes work with the U. S. Bureau of Standards. He has followed his chosen profession for some thirty years.

Opens Branch

Announcement has been made by The Emerson Electric Co., St. Louis, Mo., of the opening of a branch sales office in Detroit, Mich. The new office is located in the Stormfeltz-Loveley Bldg., Woodward and Grand Blvd.

Research Director

Earle W. McMullen has been named director of research of the Eagle-Picher Lead Co. This position formerly was held by Dr. John A. Schaeffer, who resigned to become president of Franklin and Marshall College. Mr. McMullen's past work includes fifteen years as director of research and technical process at the Simmons Co. and work on insulating materials with Celotex. In taking up his new work,

Earle W. McMullen

Mr. McMullen leaves Ault & Wiborg Corp., where he has been vice-president and plant manager.

Anniversary

- *Fitzgibbons Boiler celebrates fiftieth year in business*

Fifty years in any business is a long time, and in the history of American industrials it is a comparatively rare occurence. Considerable attention, therefore, has been directed by the industry to the Fitzgibbons Boiler Co., Inc., Oswego, N. Y., which, with the coming of 1936, celebrates its fiftieth anniversary. The company now has completed an unbroken half century in the manufacture and development of steam boilers exclusively.

Homer Addams

Founder of the Fitzgibbons company, back in 1886, was Patrick Fitzgibbons. In 1921 the company was acquired by Homer Addams, a man who had been prominent in the boiler business for twenty years. As president he has directed the activities of the company since that date.

The Fitzgibbons plant today is described as being completely integrated, having its own foundry and equipment for a wide range of types and sizes of boilers.

Smith

Stuart Smith, assistant to the vice president and western sales manager, American Radiator Corp., who has been located in Chicago, has been transferred to Cincinnati as manager of the company's branch in that city. At the same time, John P. Collier, formerly manager of the Cincinnati, O., branch, has been appointed assistant manager of the company's Chicago branch.

Linwood Remodels

Reports from Detroit, Mich., state that the Linwood Pipe and Supply Co. is remodeling and increasing the size of its showroom.

Burnham Changes

The Burnham Boiler Corp., Irvington, N. Y., has announced a change in the corporate name of its subsidiary, Federal Radiator Co., Zanesville, O., to Burnham Boiler Corp. of Ohio. The purpose of the change, the company states, is to affiliate the sales and advertising program of this company more closely with that of the parent concern.

Also announced is the moving of what has been the Federal Radiator branch located in Bush Terminal, Brooklyn, N. Y., to 25-19 Borden Ave., Long Island City, New York. It is stated that the new warehouse provides twice as much space as was previously available, and that in addition to radiators, a complete line of boilers and specialties will be carried.

McAlear Appoints

Announced by the McAlear Mfg. Co., Chicago, is the appointment of The Eastern Steam Specialty Co., Inc., 125 Barclay St., New York City, as its New York representative. Members of the Eastern company include F. H. Mayer, C. J. Lohrey and C. B. Soechtig, who have been active in the control industry for many years.

Promotion Director

Randall M. Snow has been appointed director of sales promotion for the complete line of oil burners and boiler burner units manufactured by Harvey-

Randall M. Snow

Whipple, Inc., it is announced by Ray G. Whipple, treasurer of this concern. Mr. Snow was previously in charge of advertising and sales promotion for National Radiator Co. Mr. Snow attended Dartmouth College and is a graduate of Boston University College of Business Administration where he specialized in advertising and merchandising work.

Personals

H. W. Butsch has been appointed sales manager for Kainer & Co., Chicago. Mr. Butsch has been active in the plumbing and heating industry for some thirteen years, his experience including the contracting, engineering, and sales angles of the business. Members of the industry will find Mr. Butsch at the Kainer & Co. booth at the coming Heating and Ventilating Exposition in Chicago.

N. T. Branche, formerly chief engineer with the Surface Combustion Corp., has recently joined the Bryant Heater Co. as manager of engineering development. In his new capacity, Mr. Branche will function as manager and coordinating chief of the activity of Bryant divisional engineers who, with a substantially enlarged staff, are working on an expanded program of research and development.

E. O. Brady, formerly sales manager of the Stran Steel Corp. of Detroit, has been appointed regional manager for the plumbing ware division of the Briggs Mfg. Co., it has been announced by Don D. Smith, director of sales for the division. Mr. Brady will represent Briggs in the southern territory where he will contact plumbing contractors and wholesalers. His territory will include: North and South Carolina, Georgia, Tennessee, Alabama, Mississippi, Florida and eastern Louisiana.

A. L. Pritchard, of Pritchard Bros., Memphis plumbing contractors, who is chairman of the board of the National Bank of Commerce and Trust Co., Memphis, has just assumed additional duties as president of the Tennessee Joint Stock Land Bank. He replaces C. V. Moore who died a few weeks ago.

L. R. Boulware has been named vice president and general manager of the Carrier Engineering Corp., Newark, N. J., it is announced by this company. Mr. Boulware has been for the past eleven years general sales manager of the Easy Washing Machine Corp., Syracuse, N. Y.

Oscar C. Andersen, manufacturers' representative located in Chicago, has opened offices at 549 W. Randolph St.

D. G. Spahr, who has been regional sales manager in the New England territory for the Delco-Heat division of the Delco Appliance Corp., has been promoted to sales manager of this division and will be located at the factory in Rochester, N. Y.

T. T. Johnson has been appointed sales metallurgist for Republic Steel Corp. in the pig iron division, it is announced by Earl C. Smith, chief metallurgist of Republic. He will be attached to the Birmingham, Ala., district of the company. Mr. Johnson had previously been general superintendent of the Bessemer, Ala., works of the U. S. Pipe & Foundry Co.

Henry W. Wendt, president of Buffalo Forge Co., has been elected a director of the Buffalo Club, Buffalo's leading organization for men.

John Roth, for many years with J. L. Murphy Co., New York City, is now connected with Dimock & Fink Plumbing Supply Co., New York wholesalers, and will call on contractors in the Bronx. This represents the renewal of an old connection for Mr. Roth, as he was with the Dimock & Fink company some ten years ago.

Business Changes
and New Incorporations

Davis Boiler Works, New Haven, Conn., has incorporated to manufacture boilers and sheet metal products with $50,000. The incorporators are: Francis X. Dugett, Hamden; Isadore Z. Sigle, 129 Church St., New Haven; and Antoinette C. Field, West Haven.

Buensod-Stacey Air Conditioning, Inc., has been incorporated with headquarters in the Lincoln Bldg., 60 E. 42nd St., New York City. This corporation will act as a personal service organization in the air conditioning contracting field, it is stated. Officers are: A. C. Buensod, president; Alfred E. Stacey, Jr., vice president; M. S. Smith, treasurer; and H. W. Marshall, secretary.

C. A. Dunham Co., Chicago, has recently moved its San Francisco sales office from 424 43rd Ave. to 1723 Green St. Clark Keeler is manager of this office.

Republic Steel Corp. has announced the removal of its Cleveland, O., district sales office from the Union Trust Bldg. to 920 Republic Bldg. W. E. Collier continues in charge of the office as district sales manager.

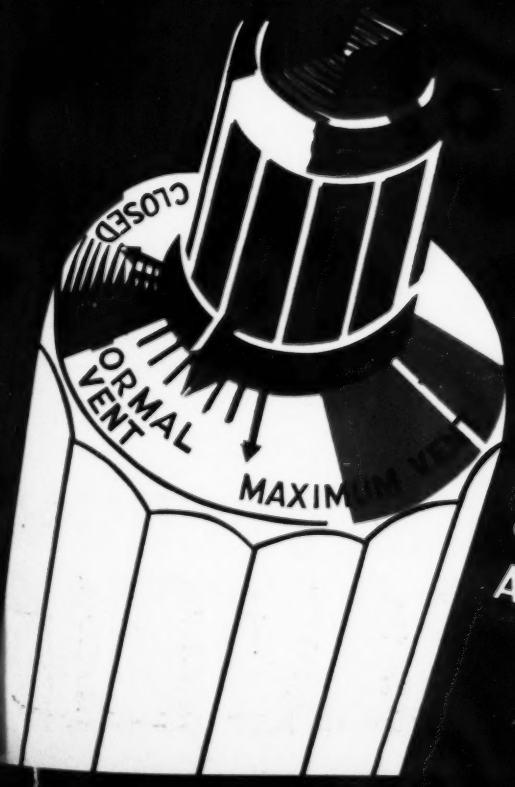
Combustion Engineering Laboratories, 1112 South Liberty St., Muncie, Ind., recently has been organized for the expressed purpose of engaging in the designing, development and testing of oil burning apparatus. H. D. Weed is listed as secretary.

WHAT A FUTURE!

VARI-VENT PROFIT

DOLE VARI-VENT VALVES

Latest feature of DOLE AIR AND VACUUM



A FORECAST OF THE AIR AND VACUUM VALVE BUSINESS...

Above the popular Dole No. 2B Valve with Vari-Vent construction, in a cut-away view.

Dole Syphon Air Valve No. 1 is illustrated at right with the Vari-Vent feature (available also in the regular construction, of course). Adjustment of the Bakelite top enables you to EQUALIZE steam requirements between radiators near the boiler and those hundreds of pipe feet away.

The Dole Valves supplied with the Vari-Vent feature are the No. 2B, No. 100 and No. 1.

The NEW THING in air and vacuum valves is—DOLE VARI-VENTS! What they will mean to you is—THE BIGGEST MARKET EVER!—5,000,000 prospects for the industry as we pointed out statistically last month.

What variable venting will mean to your customer is—A WONDERFUL IMPROVEMENT IN OPERATING EFFICIENCY FOR ONE-PIPE STEAM SYSTEMS—namely greater comfort at lower cost.

All Set for Real Profit

You don't often face the future with as strong a profit setup as you have now with Dole Vari-Vents and the complete Dole Line. There are none of the common sales handicaps. There is no question that millions of people want the improved heating economy and comfort which Vari-Vents will bring out of their present heating plant. The cost is so small they will buy. And your profit, as always on Dole Valves is liberal. Besides this, building activity has been dammed up—is due to break out, not only in new construction but in modernization of worn out heating plants, conversion from stove heat, etc. For these entirely new jobs the dependable low cost logical system to install is

One-Pipe Steam with Dole Vari-Vents

That's why our forecast for the air and vacuum valve business is confident: A GREAT MANY HEATING CONTRACTORS ARE GOING TO TOWN WITH DOLE VALVES. Alert ones already have installations working—customers telling their friends how Vari-Vent equalization solves the old problem of distant radiators steam-starved by those near-the-boiler. These contractors are already getting the feel of the profits rolling in—and they can see them rolling far ahead in the future. Be prepared to install new one-pipe steam systems with Dole Vari-Vents all Spring and Summer. Get stock from your jobber—any needed information from us.

THE DOLE VALVE COMPANY

1901-1933 Carroll Ave., Chicago, Ill.

Offices and Representatives in all Principal Cities

Dole

AIR AND VACUUM VALVES

OVER

Copyright 1935 The Dole Valve Co. Printed in U. S. A.

Recognition

Over Radio . . . Thru Magazines . . . In Newspapers . . .

On the Air

• *Our industry's message goes to radio audience thru series of planned broadcasts*

The fact that it is important for all members of the plumbing and heating industry to recognize and to take advantage of the recognition which is given it by agencies outside of our industry, is the reason for this page, which is a new feature in this issue. A radio address here, a news item there, and a popular magazine story somewhere else, may not seem important when considered individually. However, when considered together, these concerted and planned efforts on the part of our industry to make the consuming public conscious of what it has to offer them, assume impressive proportions. For instance, the Plumbing and Heating Industries Bureau estimates that publicity received last year by our industry which that bureau alone obtained, totaled an amount which would have cost $400,000 if purchased at regular advertising rates. Recent radio recognition is indicated in the following talks which have been made by various members of the industry:

Health

George W. Frank

George W. Frank, president of the National Assn. of Master Plumbers, was a speaker on an N. B. C. Blue network program on Dec. 16. "The master plumber," said President Frank in part, "is always interested in new developments that will expand his business and help him serve the public better. . . . The objective of master plumbers is to promote health and sanitation. And the support we are receiving from great industries helps to advance this worthy cause." Mr. Frank was a guest speaker.

Faucets

A. C. Brown

"Modernize Your Faucets" was the title of a radio talk given by A. C. Brown, president of the Chicago Faucet Co. over Station WLS, Chicago, on Dec. 24. "Modern plumbing fixtures are not only more attractive in appearance but, what is even more important, they are superior in performance and their maintenance cost is less," pointed out Mr. Brown.

"What about the faucets in your bathroom?" he asked. "Are they dull, tarnished, worn and leaking? You would be surprised to know how expensive a small leak can be. If two or three faucets are leaking, the cost is very substantial.

"In the purchase of faucets you should be guided by the advice of a licensed master plumber—a man who is expert in plumbing. There are faucets and faucets! The licensed master plumber knows and appreciates the value of quality in workmanship and in materials."

Investment

"The Investment Value of Plumbing Modernization" was discussed by John J. Calnan, member of the board of directors, National Assn. of Master Plumbers, in a radio talk over Station WBBM, Chicago, Nov. 21.

"You can tell the age of a house by its plumbing," said Mr. Calnan, "Probably nothing in the construction of houses, apartments or hotels has changed so much in the last ten years as plumbing equipment.

John J. Calnan

"Until a few years ago, plumbing fixtures had no style. They were built for utility only. The tub stood on legs. The closet had a high tank, and the lavatory had no particular distinction in the design of its basin, top or supports. Today, all plumbing fixtures except the very cheapest have a beauty of form that has enabled the licensed master plumber to make the bathroom the most beautiful room in the house."

After discussing the improvements in design which have been made in various types of plumbing equipment, Mr. Calnan pointed out, "It is because of the superiority in appearance and performance of modern plumbing fixtures that the replacement of outmoded equipment is profitable to the owner. Keenly aware of the difference between modern and out-of-date plumbing the public is reluctant to rent houses or apartments with bathrooms that look old-fashioned."

Improvements

E. J. Gossett

Some of the recent improvements in boilers, radiators and controls and regulators, were pointed out by E. J. Gossett, president of Bell & Gossett Co., in a radio talk over WBBM, Chicago, on Nov. 21. "The value of a house is measured primarily by its livability," he stated. "Architectural design, beauty of interior and ex-

terior finish, planning of rooms, and the location of the house are important. Even more significant, however, is the provision made for keeping the occupants of the house comfortable and healthfully warm in all kinds of weather. . . .

"It is a far cry from the big iron buckets and coal stoves, around which the whole family clustered, to the modern heating system that completely eliminates drafts, and heats all rooms with equally distributed warmth. Remarkable improvements have been made in recent years in the efficiency of heating equipment, in making its operation automatic, and in improving appearance."

Bathrooms

Charles E. Gawne

"Modern Plumbing for Your Home" was the topic of Charles E. Gawne, president of the Plumbing Contractors' Assn. of Chicago, who spoke over Station WLS, Chicago, on Nov. 12. "A large number of FHA loans are being made for plumbing improvements—for the modernization of bathrooms and for the installation of additional bathrooms," pointed out Mr. Gawne.

"With a handsome streamlined tub, a lustrous lavatory of vitreous china, glistening chromium plated faucets and fittings, the bathroom is easily the most beautiful room in the house. . . .

"The master plumber who is licensed by your state or city to do plumbing work is the man whom you should consult with respect to all plumbing improvements. He has made a life's study of plumbing. He knows how to install the fixtures so that they will give you years of trouble-free performance.

Conditioning

D. E. Kennedy

"To the average American today air conditioning is synonymous with cooling," pointed out D. E. Kennedy, vice president and western manager of sales, American Radiator Co., over Station WBBM, Chicago, on Dec. 26. "Ask the man on the street what he means by 'air conditioning,' and nine times out of ten he will say, 'Why, cooling the house, of course. . . . . .'

"Cooling is only a part of air conditioning. . . . . Heating is by far the most important factor in the greater part of the United States. Heating is 75 per cent of conditioning. . . . .

"This is a most advantageous time to buy heating. Heating systems are actually selling today at 40 per cent lower than the 1920 price level. Ask your neighborhood heating contractor to give you an estimate on the cost of modernizing your home or business property with good radiator heated conditioning. Or, if you are so fortunate as to be contemplating the building of a new house or business structure, by all means get from your heating and piping contractor complete information on up-to-the-minute heating and conditioning equipment."

Heating

Opportunities for modernizing the heating plant under the FHA were described by Guy Hutchinson, vice president and general manager of the Hoffman Specialty Co., Waterbury, Conn., in a radio address over Station WBBM, Chicago, on Oct. 24. "No doubt we are all agreed that nothing contributes so much to the comfort and convenience of life during the winter months as good heating," he stated. "The heating plant is the heart and soul of the house. If it functions to your satisfaction, the house becomes a home, warm and cheerful. If the system is defective in any way, the house is bleak and cheerless, efficiency is impaired, and the health of the occupants is endangered with resultant discredit on all concerned.

Guy Hutchinson

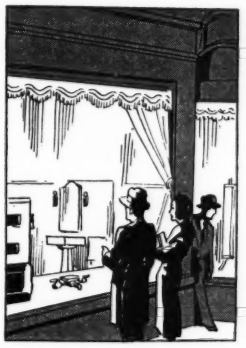
"Uncle Sam is interested in helping you have good heating. Through the National Housing Act, the federal government is making it possible for all citizens of the United States of good character who have steady incomes to enjoy the benefits of radiator heating and air conditioning. . . . May I suggest that you call your heating contractor today and ask him to suggest the best methods of modernizing your heating plant?"

In Newspapers

Six million newspaper readers received on Jan. 2 the message that "The Tide Has Turned!" and "Now that the tide has turned, let's go forward with renewed courage and greater confidence. Let's build so well that our homes will be havens of rest and comfort . . . protection against the ravages of time . . . safeguards against pestilence and disease." This message, which appeared in 43 newspapers throughout the country, further pointed out "We believe they (master plumbers) are the only men qualified by training and experience to furnish the skilled workmanship so necessary to satisfactory service and the protection of health. Now, more than ever, 'the Plumber Protects the Health of the Nation.'"

This newspaper advertising is a part of a program which is being carried on by Standard Sanitary Mfg. Co. for the purpose of assuring that good plumbing is used in the increasing number of residences and buildings soon to be constructed. Of particular interest to plumbing contractor-dealers is the fact that this effort has been designed to regain and to retain for master plumbers, the business which is theirs normally.

This illustration was used in connection with the newspaper message to retain business for master plumbers



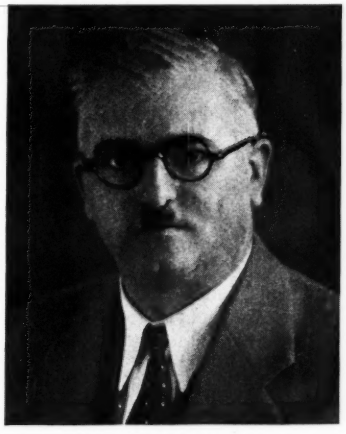
Trade

News of . . . Men . . . Associations . . . Events . . .

New N.A.M.P. Director

- *President Frank appoints E. L. Kimble of New Orleans to fill the vacancy caused by the death of Louis J. Petrie*

Edmond L. Kimble, New Orleans, La., who for many years has been active in the association affairs of the industry, has been appointed a director of the N. A. M. P., it is announced by President Frank. He will fill the vacancy resulting from the recent death of Louis J. Petrie. Mr. Kimble is associated with the firm of James H. Aitken and Sons, Inc.



Edmond L. Kimble

Mr. Kimble was born in New Orleans on Dec. 12, 1893. He attended public and private schools and was graduated in 1911 from university with the degree of B. S. He was married in 1917 and has two sons, ages seventeen and ten.

Active Worker

Mr. Kimble has been very active in fraternal and association affairs, and has held many responsible positions in the fraternal organizations of his city. He was business manager of the New Orleans Assn. of Master Plumbers from 1924 to 1932, and editor of the *Southern Plumber* from 1927 to 1932. During that time he acted as assistant secretary of the Louisiana-Mississippi Assn. of Plumbing and Heating Dealers, and was treasurer of that association during 1934 and 1935. During that period he served on many important committees.

Those who attended the National Convention in New Orleans will recall Mr. Kimble as chairman of the attendance committee. In addition to his experience in the plumbing industry, he has been associated with a firm of certified public accountants and served as auditor in the finance division of the Quartermaster Corps during the war.

The illness and unexpected death of the late Louis J. Petrie prevented his carrying out the extensive plans for organizing the territory assigned him (Arkansas, Tennessee, Louisiana and Mississippi). Mr. Kimble will have this same territory under his supervision.

Utah Annual

- *Marshall Ericson is elected president—National Director Kruse tells of work of N. A. M. P.; discusses d.t.u. competition.*

Marshall G. Ericson, a member of the Rees-Ericson Plumbing Co., Salt Lake City, was elected president of the Utah State Assn. of Master Plumbers at the annual convention held Dec. 7 at the Newhouse Hotel, Salt Lake City. Mr. Ericson, who is past president of the Salt Lake Association of Licensed Plumbers, succeeds Leo J. Holbrook of Bountiful, who has served the past two years.

Alex Mortenson, Provo, president of the Utah County Assn. of Master Plumbers, was chosen vice president, and James L. Morris, Murray, secretary-treasurer. In addition to these officers, the following will be members of the board of governors: Ambrose H. Higham, Salt Lake City; Henry G. Blumenthal, Provo; and Milton Bachman, Ogden.

Kruse Talk

One of the principal speakers at the meetings was National Director L. J. Kruse. "The National Association is doing everything possible, with its limited resources, for the betterment of the plumbing industry," said Mr. Kruse. "The breaking down of the code was followed by a slump in association work, which is rapidly being succeeded by increasing activity. The code not only served its purpose at the time, but has left many associations which are today active, that would otherwise not have been in existence.

"The plumbing industry is practically the only craft in the construction industry, which is still selling the merchandise on new work. Most crafts are now only contracting the labor. If we are to stay on that basis, we must continue the fight. There are plenty of builders, especially the speculative ones, who desire the breakdown of the present system of distribution."

d.t.u. Competition

Mail order and d.t.u. competition should decrease as general conditions improve, was Mr. Kruse's opinion. He anticipated that the public would be buying less upon price and more upon quality. In cases where the customer has already purchased the material from a d.t.u. house, Mr. Kruse advocated its installation upon an hourly basis.

"While none of us like to render services in such instances, nevertheless there are times when it would be extremely poor business judgment to refuse, as we would lose a customer whom we desired to keep. We tell our customers that in view of the fact that they already have the material, only

labor remains and accordingly this must be done on a time basis and we cannot give them a definite price. If we secure the installation, we do so at a profit; if we lose the job, we generally retain their good will."

The speaker urged the members not to become discouraged because non-association members also benefited from their efforts. He stated that while the profits have been small enough, they would have been less, if there had been no association activity.

New Hope

"The last six months have given new hope that the industry will weather the storm. After all, we should not become too discouraged when we realize that the established master plumber sells approximately ninety per cent of the plumbing merchandise, and the d.t.u. and mail order houses only ten per cent."

Leo Holbrook, retiring president, urged greater State and National association support. Edmund Evans, president of the Salt Lake Assn. of Licensed Plumbers, complimented Mr. Kruse upon his work. Mr. Mortenson announced that the Utah County Assn. of Master Plumbers had incorporated as a non-profit association. With increased building and a more active enforcement of the Provo ordinance, members of that vicinity anticipate a profitable year, he said.

Ordinance Up

A proposed ordinance requiring the examination of journeymen and masters who work with the tools is now before the Salt Lake City Commission, according to A. H. Higham, chairman of the public welfare committee of the Salt Lake Assn. of Licensed Plumbers, which is sponsoring the matter. Indications for its passage are very favorable, he said.

Lester Page, a master plumber guest from Pinedale, Wyo., declared that conditions were much improved in that State, and he expected to see a State association formed in the near future.

Retiring President Holbrook and Retiring Secretary George W. Bruerton were given a vote of thanks for their efforts.

Entertainment

The business sessions were followed by an entertainment in the evening, under direction of a committee composed of A. H. Higham, Lester Bills and Charles J. Dietz. Speakers included Ralph Ludlow, manager of the Mountain States Supply Co., representing the jobbers; Angus Scott, president of the journeymen's local; President-elect Ericson, and Mr. Kruse.

Fine---$50

- *First conviction is obtained under new Chicago plumbing license ordinance*

The first conviction secured under the new license ordinance passed by the Chicago city council, which provides that all plumbing work must be installed by a licensed journeyman under the supervision of a licensed master plumber, was obtained on Dec. 12 when James Moran of Chicago was fined $50 and placed on six months' probation by Municipal Judge Erwin J. Hasten. Mr. Moran, who was arrested, was charged with and convicted of violating Sections 3593 and 3596 of the municipal code on the score of installing a complete bathroom and domestic hot water tank in a Chicago building without having a license.

The Plumbing Contractors' Assn. of Chicago, whose attorney assisted in the prosecution of this case, is actively cooperating with the journeymen plumbers and the Department of Health in an effort to secure a more rigid enforcement of the plumbing license law in Chicago.

Enforcement of the state law also is progressing. In a bulletin recently sent to all local associations in the State, the Illinois Master Plumbers' Assn., through its secretary, William R. Brookman, called attention to the first conviction under the new state license law of an unlicensed man doing plumbing work. Bryan Cole of Sidney, a hardware dealer, was fined $25 and costs in the Champaign County Court in Urbana Dec. 5 after pleading guilty to operating as a master plumber without a license.

The department of registration and education is now checking all over the state on numerous complaints submitted to the office of the association and also checking on former holders of licenses who failed to obtain the new license, in order to bring all into compliance with the law. The new State license law is designed to insure and safeguard public health by having plumbing installations made by competent licensed men.

Big Heating Week

- *Conventions and exposition will bring heating and ventilating men to Chicago for week of Jan. 27.—Large attendance expected*

A big week for the heating, ventilating and air conditioning profession will be that of Jan. 27. Scene of activities will be Chicago. During this week there will be the forty-second annual convention of the American Society of Heating and Ventilating Engineers to be held in the Palmer House, Jan. 27-30; and the Fourth International Heating and Ventilating Exposition, to be held in the International Amphitheater, Jan. 27-31.

A comprehensive program has been planned for the A.S.H.V.E. meeting, a part of which will include the results of many months' research carried on at the society's laboratories in the U. S. Bureau of Mines, Pittsburgh, Pa., and at various cooperating institutions, which will be presented to the members for discussion. Such subjects of current interest are: Conductivity of Concrete, Corrosion in Steam Heating Systems, Influence of Storm Sash on Fuel Saving, Heat Transfer through Finned Surfaces, Desirable Air Quantities and Summer Comfort Standards.

The meeting will be opened with a business session on Monday, Jan. 27, by President John Howatt of Chicago, and reports of the officers and committees will be presented. The results of the annual election will be announced at this time. Mayor Edward J. Kelly of Chicago will welcome the members, who will spend the following three days discussing technical papers and reports.

Members of the Illinois chapter of the A.S.H.V.E. will be hosts for this occasion, and the committee on arrangements will be under the direction of J. H. Milliken, chairman, and J. J. Hayes, vice-chairman. Other members of the committee are: J. R. Vernon, reception; Carl F. Hayden, ladies; Tom Brown, entertainment; J. P. Fleming, banquet; Charles E. Price, publicity; and Elmer W. Reitz, finance.

Annual Banquet

The outstanding social event of the meeting will be on Wednesday evening, Jan. 29, when the annual banquet and dance will be held. After the banquet the F. Paul Anderson medal will be presented by President John Howatt; and then he will receive the Past President's Emblem. A brief address will be given by Major John L. Griffiths and the duties of toastmaster will be handled by Oliver J. Prentice of Chicago.

The A.S.H.V.E. Research Laboratory will have a graphic display of its work at the Heating and Ventilating Exposition. Also the first public appearance of the 1936 A.S.H.V.E. Guide will be at the exposition.

Exposition

- *Broad range and volume of exhibits to be presented by several hundred manufacturers at heating and ventilating show*

A full house of carefully planned, interesting exhibits is indicated for the opening of the Fourth International Heating and Ventilating Exposition. The great new International Amphitheatre in Chicago will be the setting for this big volume of displays which will be presented during the week of Jan. 27-31. This represents the first heating and ventilating exposition to be held in the middle west, previous exhibits having been in Philadelphia, Cleveland and New York.

Heating, ventilating, and air conditioning will be the principal fields represented by the hundreds of exhibitors. Heating units and boilers of every type and for every fuel will be on display, and there will be a comprehensive showing of unit heaters and central heating systems. Hot water heaters, both separate and for use in conjunction with main heating plants will be demonstrated with emphasis on speed and economy of operation. Every form of air conditioning with accessories will be shown in a large section of the exposition devoted to this new field. There will also be many exhibits devoted to refrigeration and to the display of insulation materials protective against heat and cold. The ventilating section will cover all phases of the equipment problem from intake to distribution, showing a comprehensive pageant of fans, blowers, registers, grilles, and air filtering materials. Pumps, electrical equipment, metals and alloys, and pipes and fittings will be among other products shown.

Warm Air Program

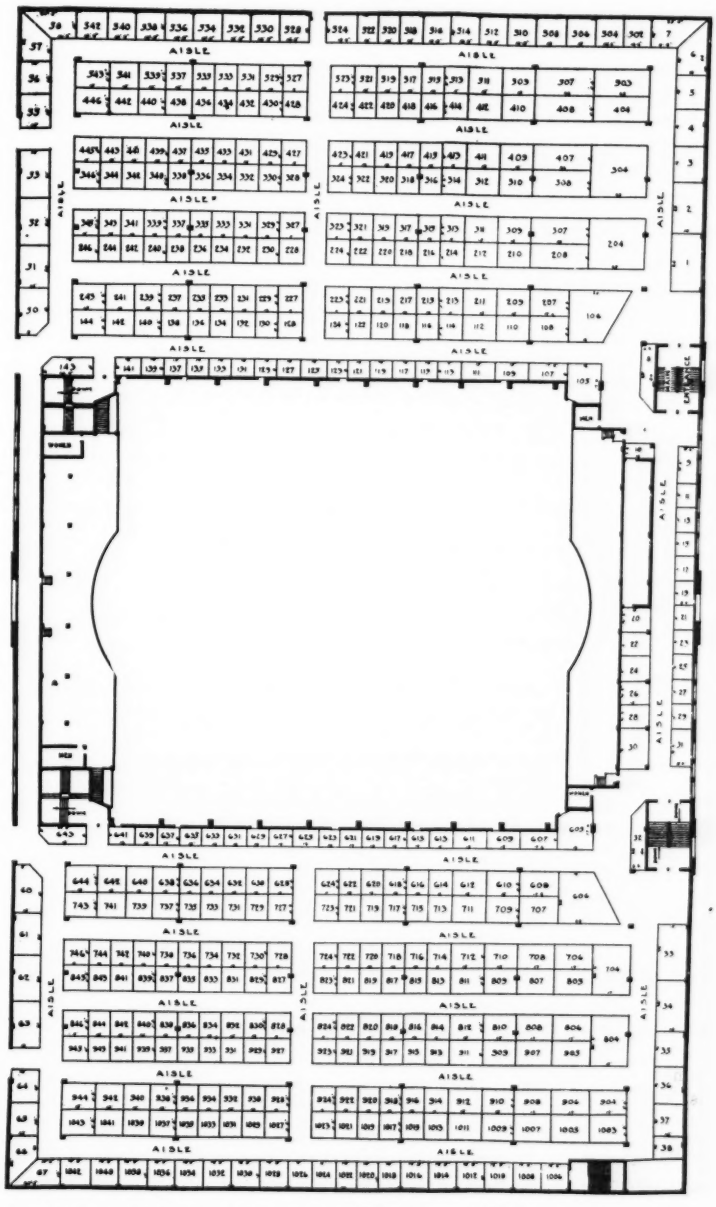
Merchandising, research, engineering and business conditions will be covered at the twenty-third annual convention of the National Warm Air Heating and Air Conditioning Assn., also to be held during this week on Jan. 29-30 in Chicago, it is disclosed by the complete program for the convention which has just been released. The convention will be held in the Stevens hotel, according to schedules.

Among the talks which will be presented are: "Federal Housing Administration—Recent Developments and Progress Made" by A. O. Eberhart, Federal Housing Administration; "Insulation, Why and How," by J. D. Hoffman, Purdue University; "Progress Report on Residence Cooling Using Water from City Service Mains," by S. Konzo, special research associate at University of Illinois; "Merchandising in Our Industry," by L. R. Taylor, Utica, N. Y.; and "The Bituminous Coal Industry's Program of Research in Domestic Heating," by Ralph A. Sherman, Battelle Memorial Institute. This institute is located at Columbus, Ohio.

Not So New

- *Term "air conditioning" was used back in Victorian days, A. C. M. A. shows*

Most people think of the term "air conditioning" as a product of recent inventive progress. But the Air Conditioning Manufacturers' Assn., points out that at least as far back as thirty-two years ago "air conditioning" was a term in general use. It described the same functions of air cooling, heating, and moistening and the automatic regulation of those fundamental air condi-



Booth plan of the Fourth International Heating and Ventilating Exposition to be held in the International Amphitheatre, Chicago, Jan. 27-31

tions in addition to ventilating and air cleansing that it does today.

Stuart W. Cramer speaks of the term "air conditioning" at length in his book published in 1904. He says:

"Several years ago, I was puzzled to find a word that would embrace this whole subject. In casting about, I finally hit upon the compound word, 'air-conditioning' which seems to have been a happy enough choice to have been generally adopted. The idea was suggested by use of the term 'conditioning' in the treatment of yarn and cloth, and even of raw materials before manufacture. . . . Summarizing, apparatus for air conditioning should provide means for—(a) heating; (b) air moistening; (c) ventilating; (d) air cleansing; (e) air cooling, and (f) automatic regulation of humidity and temperature to a predetermined standard."

Big Program

- *Illinois masters lay plans for comprehensive State convention — New Illinois license law will be discussed*

The new Illinois Plumbing License Law, and its many ramifications, will be one of the most important topics to be discussed at the forty-third annual convention of Illinois Master Plumbers' Assn. at the Congress Hotel, Chicago, Jan. 13-16. John E. Cassidy of Peoria, who represented the association in the drafting and sponsoring of the bill in the last session of the legislature, has been invited to be a speaker at the convention and to explain the details of the law.

Likewise, Homer J. Byrd, superintendent of registration of the department of registration and education, charged with enforcement of all State license laws, will be one of the principal speakers at the convention. Mr. Byrd has devoted considerable attention to the task of placing the new plumbing license law in effect throughout the State and has been cooperating with the association in its efforts to protect public health through strict enforcement of the plumbing license law.

Speakers

National President George W. Frank of Buffalo, and National Director John J. Calnan of Chicago, Harry C. Yelton, president of the Central Supply Assn., Martin P. Durkin, director of the department of labor of the State of Illinois, Harry R. Shaw of Rockford, president of the Illinois Pipe Trades Assn., S. F. Jefferies, secretary of the National Brass Assn., Dr. Herman N. Bundesen, president of the Chicago Board of Health, and W. R. Evans of the Peoples Gas, Light and Coke Company of Chicago, are other principal speakers scheduled for the convention.

A portion of the convention program will be devoted to the subject of the Chicago testing laboratory.

Tuesday afternoon will be devoted entirely to demonstrations at the laboratory, located in the place of business of Hanley and Company, of which Thomas F. Hanley, Jr., first vice president of the State Association, is the head.

Committees

Under the guidance of Wm. J. Lang, chairman of the general arrangements committee, a splendid program of entertainment is being planned, beginning with the president's open house, on Monday night, Jan. 13, and ending Wednesday night, Jan. 15, with the annual dinner dance, which is being staged, this year, in honor of two of the oldest members, in point of membership, in the State association, namely Dan O'Connor of Peoria and Charles J. Herbert of Chicago. On Tuesday night, a keno party will be staged.

The Women's Auxiliary of the Illinois Master Plumbers' Assn. will hold its thirteenth annual convention in conjunction with the association convention and Mrs. Fred W. Hager of Chicago, president, looks forward to one of the best auxiliary gatherings in many years.

Special entertainment is being arranged for the auxiliary members and all women visitors to the convention in the form of a luncheon and card party at the Congress Hotel, Tuesday afternoon, Jan. 14.

Entertainment

President Charles E. Gawne of the Chicago association, hosts to the Convention, has appointed committees for the various events.

Chairmen of the various committees, in addition to Mr. Lang as general arrangements committee chairman, are—reception committee, J. C. Naughton; president's open house, Chas. A. Dreier; buffet lunch (Tuesday noon), E. C. Wagner; laboratory demonstration, Thos. F. Hanley, Jr.; dinner for central states committee, Henry P. Reger; keno party, Charles E. Gawne; dinner dance, Wm. Redieske; arrangements for women, T. W. Merryman. For the auxiliary and women guests, Mrs. Fred W. Hager is chairman of the general arrangements committee. Mrs. Robert Nelson is chairman for the president's open house; Mrs. Walter G. Compton is chairman for the luncheon and card party.

Delegations, including the presidents and secretaries of the several State Associations, are expected from the states of Wisconsin, Minnesota, Michigan, Iowa, Missouri, Indiana, Kentucky and Ohio, and there will be a meeting of the officers of these various State associations at a dinner, Tuesday night of the convention, to discuss association affairs affecting the Middle West.

Sanitation

- *Important part of N.A.M.P. in protection of public health pointed out by Jere Murphy*

Following, there is given in part a statement recently issued by Jere L. Murphy, chairman of the standardization committee of the National Assn. of Master Plumbers:

"From personal observation I believe that the United States leads the world in sanitary plumbing; that is, in the installation of plumbing piping and the connecting of plumbing fixtures to that piping. As a matter of fact, they are attempting to do in Europe today what we accomplished in the United States some 50 years ago, namely, the successful installation of plumbing piping in all types of buildings and prevention of sewer air from entering those buildings. All the pipe and fittings that go to make up a plumbing installation are naturally as important to the well being of the building in which they are installed as the workmanship.

"It is my observation that were it not for the work of the National Assn. of Master Plumbers we would not lead Europe in scientific and sanitary plumbing, and it is my observation that the National Assn. of Master Plumbers, through its work on research and through its constant vigilance, has put plumbing on the high plane on which it is today.

"Every plumber who has passed his examination as to his qualifications to install plumbing properly is a health officer and he is charged with the duty of protecting the health of the American public and that is as it should be."

Hildebrand

At a recent regular meeting of the Plumbing Contractors' Assn. of Chicago, the following resolution was passed with reference to Jos. Hildebrand, executive secretary of the N.A.M.P., who has been suffering from illness:

WHEREAS: We have learned with deep regret that Jos. G. Hildebrand, executive secretary of the National Assn. of Master Plumbers, has been incapacitated by illness from the performance of his duties in the national office, and

WHEREAS: His untiring efforts during the past year on behalf of the National Assn. of Master Plumbers, working long hours in his devotion to duty, has been partly responsible for his present state of health, therefore be it

RESOLVED: That we, the Plumbing Contractors' Assn. of Chicago, appreciating the efforts put forth by him in promoting the interest and welfare of the national association, and especially his splendid work in connection with our national convention held in Chicago last June, owe Mr. Hildebrand a debt of gratitude.

RESOLVED: That we forward a copy of this resolution to Mr. Hildebrand with a letter expressing the hope of our members for his early and complete recovery.

Prints Placards

- *Georgia State association makes available business-building aids to members*

Among the business-building ideas recently developed by the Georgia State Assn. of Master Plumbers is the printing of placards for members. These placards urge builders to patronize responsible and established plumbing firms and are being made available to all members who wish to use them. In addition, decalcomanias, bringing a similar message to the public, have been printed and distributed to members for use on trucks, display windows and the like. The Georgia State association is under the leadership of O. A. Kimball, who was elected president at the last annual meeting.

Membership Increased

Considerable attention has been given by the association in recent months to expanding its membership with the result that the past half year has seen a good increase in the number of master plumbers who are members of the organization. This is another example of the special efforts which have been made along this line by various groups.

Re-elect Roth

All officers and members of the board of governors of the Bronx Branch, Inc., of the Association of Master Plumbers of the City of New York were re-elected at a meeting held in the association rooms on Dec. 18. The officers are: Frank R. Roth, president; Philip Farbman, vice president; Richard Schween, secretary; Alfred Beyrodt, financial secretary-treasurer; Woodward F. Ebner, marshall; and Joseph Milback, sergeant-at-arms. Directors are: Philip Farbman, chairman; Alfred Beyrodt; Harry Sugarman; Joseph F. Egan; A. Freigenberg; Louis Guerr; Richard Schween; Robert R. Licht; William Robitzek; and S. G. Arnone.

Rockaway Officers

At a recent meeting of the Rockaway division of the Greater New York Master Plumbers Assn., the following officers were elected for 1936: president, Walter Hoch; first vice president, P. S. Scott; second vice president, Geo. McGovern; secretary, W. McCarthy; treasurer, Thos. Nolan; sergeant-at-arms, M. Rosen; and chairman, board of governors, Peter M. Tremper.

Association Moves

The Chicago Plumbing Contractors' Assn. shortly after the first of the year moved its headquarters from the nineteenth to the eighth floor of the Midland Building, 176 W. Adams St., where it has somewhat larger quarters than have been occupied by the association in the Midland Building for the past few years.

Jersey Hosts

- *Dinner given for manufacturers and wholesalers by Jersey City association*

Believing that "turn about is fair play," the Master Plumbers' Assn. of Jersey City, N. J., on Dec. 4, gave a dinner to the manufacturers and and wholesalers who cooperated at the recent New Jersey State convention, which was held under the auspices of the Jersey City association.

The affair was held in the Plaza Hotel in Jersey City, and while a delicious dinner was being consumed, the guests were entertained by a boxing bout and several musical numbers.

Speakers

Jas. T. Brennan, secretary of the association, acted as toastmaster and called on the following for speeches: Jas. J. Conlin, president of Jersey City association; Edmund P. Ingram, president of the New Jersey State association; John J. Corcoran, past president of the State association; Chas. Werner, treasurer of Jersey City association; Geo. Cooper, past president of Jersey City association; C. B. Wynne, Standard Sanitary Mfg. Co.; Walter F. Johnson, American Radiator Co.; Walter S. Meany, Public Service Electric & Gas Co.; G. H. Koven, L. O. Koven & Bro. Inc.; Frank Boyd, B. & B. Plumbing and Heating Supply Co.; Phil T. Boone, Richardson & Boynton Co.; Jos. F. McGinity, W. V. Egbert & Co.; and J. R. "Shorty Lewis, DOMESTIC ENGINEERING.

The basis of a majority of the talks was better cooperation between all branches of the industry in the promotion of established distribution channels. Mr. Brennan spoke of the once flourishing salesmen's organization, and declared it had been of real service to the industry in this section. Several of the speakers advocated its resurrection.

At a dinner and entertainment given by the Jersey City Master Plumbers' Assn. to manufacturers and wholesalers who cooperated at the recent New Jersey State convention

At the fifth annual banquet of the Greater City Master Plumbers' Assn. held in the Grand Ball Room of the Hotel Astor, New York City

Banquet

- *Fifth annual Greater City banquet enjoyed by more than 500*

With over 500 present the fifth annual banquet of the Greater City Master Plumbers Assn. was held on Dec. 14 in the Grand Ball Room of the Hotel Astor, New York City. Members of the association and representatives of manufacturers, wholesalers, utility companies and city departments were all on hand in numbers to enjoy the gala occasion. There were also delegations from the Kings County Master Plumbers Assn. of Brooklyn, N. Y., and the State League of Master Plumbers of New Jersey.

A delicious dinner was served and an excellent orchestra provided the latest in dance music. Throughout the evening, special entertainment was provided by entertainers from leading theaters and night clubs.

At a regular meeting of the Greater City Master Plumbers Assn., Inc. held on Dec. 26, officers for 1936 were elected, these being: Frank H. Beck, president; Nathan Weinstein, vice president; Frank Barth, treasurer; and Ben Caravella, sergeant-at-arms. Trustees elected were: Herman Schiesel, for a three-year term, and Dominick Palazzo, for a two-year term.

North Shore

At its meeting on Dec. 16, the North Shore Plumbing and Heating Contractors' Assn., representing the suburbs to the north of Chicago, elected officers for the year 1936.

A. J. Butow of Evanston, Ill., was re-elected president of the association. Andrew Parks of Winnetka, Ill., was elected vice president. Emil Coel of Evanston was re-elected secretary, and Howard Moore, also of Evanston, was re-elected treasurer. These officers will be officially installed at the Jan. 6 meeting, which will be held at the Odd Fellows' Lodge Hall, in Wilmette, Ill.

President Butow conducted an interesting discussion at the Dec. 16 meeting, dealing with the proper way to apply a profit on the cost. He used a blackboard to demonstrate the proper procedure and to point out certain common mistakes that are made in figuring profit.

H. A. Bergdahl and Murray Wright, both of the Evanston branch of Crane Co., were guests at one of the recent meetings of the association. Mr. Wright delivered an interesting talk on water heaters and suggested ways whereby retail dealers might increase their sales on this item.

President Butow announced that he expects to secure a specialist on merchandising methods to deliver a series of talks at the association meetings.

Membership Ideas

"What are your local officers and members doing to better conditions in your own locality?" asks Henry J. Noord, Albany, N. Y., secretary of the New York State Assn. of Master Plumbers in a recent open message on the subject of membership. "If there ever was a time," states Mr. Noord, "when men in any industry needed cooperation and affiliations with each other to combat the evils that are driving wedges into their industry, it is now. Certainly we need new members, and men in any industry need the help of their trade organization.

"I am rather surprised at times," continues Mr. Noord, "at the lack of effort on the part of local officers of our wonderful association to prevent the resignation of men who have been members for a considerable time. Why not have a personal interview or appoint committees to locate the possible trouble and effect a better understanding between each other.

"The Albany association has been very active in the past year through the efforts of the younger men who formerly sat on the side lines and now control the destinies of our group. Perhaps this is the answer to some of our problems. It would surprise you to see the efficient way some of the young and quiet members can get results. Give them a job to do and then notice how they come through. . . .

"The measure of success of your local, State and national association is governed by what each of you have accomplished. Let us unite to our mutual benefit. Put the same enthusiasm into your association as you do in your business and see our association grow."

Robertshaw Elected

Milton Robertshaw of West Orange has been elected president for 1936 of the Master Plumbers of the Oranges and Maplewood, Inc. Other officers elected are: Willard N. Durr, East Orange, vice president; Jos. Berg, Orange, secretary; Fred Bogert, West Orange, treasurer; and Chas. Kunz, West Orange, sergeant-at-arms. Geo. Fricke, East Orange, was re-elected trustee for three years.

President-elect Robertshaw is not only active in master plumber association affairs but is a diligent worker in his community, being well known for his political, church, and boy scout work.

More Inspectors

- *Chicago Board of Health recommends appointment of two additional license inspectors*

In response to a letter from President Chas. E. Gawne of the Plumbing Contractors' Assn. of Chicago asking for cooperation in securing the appointment of two additional license inspectors to be assigned to the board of examiners of plumbers, Dr. Herman N. Bundesen, president of the Chicago Board of Health, has assured Mr. Gawne and the Chicago association that he will be pleased to accede to their request. In his letter to Mr. Gawne, Dr. Bundesen states that:

"Because I have recognized more and more, as time goes on, the great importance to health of having plumbing work done properly to safeguard

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Regulation Is Simpler
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the valve which delivers an unfailing flush, under the hardest pressure conditions, at the lowest water-cost.

IN every Watrous flush valve, it is the simplest matter to adjust the length of the flush, so that there will be an ample supply of water for the needs of the fixture, without waste.

In all Watrous types, diaphragm or piston, a full waterway assures the delivery of ALL AVAILABLE WATER, with "punch" enough for the most stubborn fixture, even at high elevations, where pressure is often low.

Adjustment is quickly and easily effected FROM THE OUTSIDE. A partial turn of a screwdriver DOES THE WHOLE OPERATION. There is no need to turn off the water, dismantle the valve, or disturb connections.

The bypass is cleansed at every flush, so that no obstruction can clog it, or prevent uniformly measured flushing. Sufficient volume is provided for each flush, WITHOUT ANY WASTE.

Order from your jobber. Write also for catalog 433.

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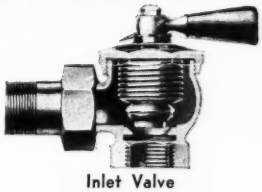
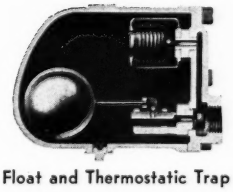
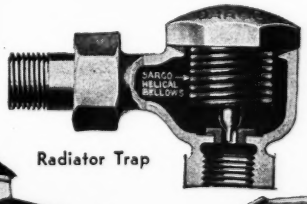
Largest California Contract Goes for SARCO Heating System



Inlet Valve



Float and Thermostatic Trap



Radiator Trap

In the largest private building contract in Northern California in 1934—the new Oakland plant of Standard Brands, Inc.—the unit heaters are equipped with Sarco FT Float-Thermostatic Traps, while Sarco Radiator Traps and Inlet Valves are used on the radiators.

Sarco Vacuum and Vapor Heating Systems are simple, durable and trouble-proof. They are made with a heaping measure of quality and sold at the lowest possible price for equal quality.

Sarco products have proven their dependability for nearly a quarter of a century. You take no chances when you use "Sarco."

See our Exhibit at Booth 144, International Heating and Ventilating Exposition, Amphitheatre, Chicago, Ill., January 27th to 31st, 1936.

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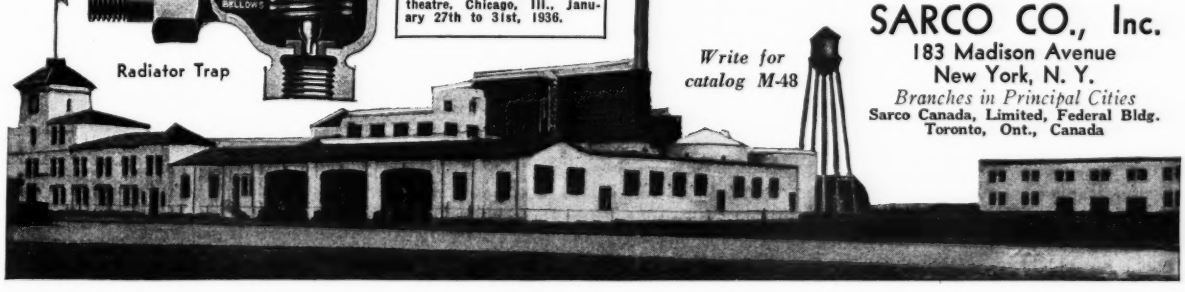


public health and prevent such unfortunate incidents as the amebic dysentery outbreak, I feel that we should work together to achieve a condition in the city of Chicago where all plumbing work is done by properly qualified licensed men."

An application, he states, has been made for an appropriation for 1936 for two additional license inspectors and the action taken by the city council upon this request will decide whether or not these men become available after the first of the year. He thanked Mr. Gawne for his cooperation and the sincere interest that the association has constantly shown in its efforts to assure better and safer plumbing for the protection of public health.

Better Year

● *Optimism on outlook expressed by J. L. DeNeille, Contractors National Association president, in New Year's greetings*

J. Lawrence DeNeille, president, Heating, Piping and Air Conditioning Contractors National Assn., under date of Dec. 18, issued the following New Year's greeting to members of the association and to the industry:

"It is a pleasure to extend to those engaged in the industry the New Year Greetings of the Heating, Piping and Air Conditioning Contractors National Assn.

"I am confident that the New Year will be a better year for those of us who approach it with a determination to make it a better year. Residential building and modernization work showed a marked improvement in 1935. New equipment, attractive in design and efficient in operation, has come on the market. New ideas in selling have been developed. Bank deposits have risen in total amounts, and retail trade has shown a comfortable increase. All the straws show the wind blowing toward a better year in 1936.

Optimism Needed

"What we need to make it a good year is optimism and enthusiasm. Both are catching and spread like an epidemic. The optimism concerning our market and the enthusiasm for our products and our services will carry us a long way in making our year a good year.

"We should be enthusiastic about our association work, too. Our associations offer us a means of cooperating to get results impossible to the individual, results in standardization, in gathering information, in legislation, in trade promotion, in any number of activities we would find beyond us acting alone, but easy of accomplishment when we all work together.

"Here's wishing all of you a most happy and prosperous New Year."

Start Credit Bureau

President William Ludlow of the Master Plumbers Assn. of Buffalo, N. Y., has appointed two nominating committees who will select candidates for presentation at the Jan. 9 meeting. The election will be held in February.

Roy P. Wilson is chairman of Committee No. 1, assisted by Alvin Dechert and William J. Greenly. C. H. Brenner is chairman of Committee No. 2, assisted by Charles Leins and Gordon Webster.

The newest activity of the association is the launching of a credit information bureau which is being worked out by Fred Jones. The bureau is being patterned after that one operated by the Master Plumbers Assn. of Philadelphia. Blank forms have been ordered printed and soon will be distributed to the members. The primary object of the bureau is to eliminate "dead-beats" which the experience of the Philadelphia and other associations has shown can be largely accomplished through such a bureau.

The class in accountancy started by the association has proven so successful that a second class is being organized.

Trap Report

● *Testing at New York University is discussed — Jere Murphy supplements comments*

A number of highly interesting reports were presented at the regular monthly meeting of the Greater New York Master Plumbers Assn. held on Dec. 16 in the rooms of the Brooklyn, N. Y., association, with President Matthew Kennedy presiding.

Phil Farbman of the Bronx association gave an informative report on the work of the gas committee. The Rockaway Division presented a report on the recent trap testing at New York University, and this was supplemented by a verbal report by Jere Murphy.

National Director Wm. J. Flynn then gave a comprehensive talk on the activities of the National association. He especially stressed the survey of Federal buildings that is to be made in New York and Detroit. He also presented a resolution thanking New York University and Prof. Walter Cleverdon for assistance in the testing of traps in the University's laboratory.

No. Hudson Elects

At the regular meeting of the North Hudson, N. J. Master Plumbers' Assn. on Dec. 2, the following officers were elected for 1936: president, Robert Thane, of Weehawken; vice president, Walter Kunz of Weehawken; secretary, Clyde C. Cole of Weehawken; treasurer, Calvin Westervelt of North Bergen; financial secretary, Otto Viehweg of Union City; sergeant-at-arms, Frank Kasper of Union City; and trustee (for five years) Wm. Haemmerle of North Bergen.

The association and auxiliary will hold a joint installation dinner sometime in January.

Drive Results

● *215 new members added by Philadelphia association— Interesting report on apprentice wage rates presented.*

Reports on the results of the recent membership drive and on a survey of local journeymen and apprentice wage rates and nominations of officers were the features of the December meeting of the Master Plumbers Assn. of Philadelphia.

More than 215 new members were added during the membership drive, it was reported by Walter Raid, chairman of the membership committee. All who assisted in the drive were given a special vote of thanks as a result of this outstanding record. President George Hicks, who presided at the meeting, welcomed the new members to the association and expressed the hope that they would take an active part in the association's work and express their opinions freely at meetings.

Wage Scales

Edward Rinear, chairman of the apprentice committee, in his report on the survey which has been made with reference to wage scales, stated that the survey shows existing journeymen wages range from $0.32 to $1.20 an hour, or an average of $0.76½ an hour. Existing apprentice wages were found to be as follows: first year apprentices, $6.00 to $15.00 per week, average $10.20; second year apprentices, $10.00 to $15.00 per week, average $14.17; third year apprentices, $8.00 to $20.00 per week, average $14.00; fourth year apprentices, $12.00 to $30.00, average $18.45.

Nominations of officers for 1936 resulted in the naming of the following men: for president, Harry Stilwell, Sr., and John Lamond; for vice presi-

dent, five to be elected, Walter Raid, Chas. Ward, Wm. Beahm, William Sheppard, Fred Kenneck, Frank Martin, Ellis Hendricks, John Nagele, Jr.; for secretary, Robt. H. Pflug-Felder; for treasurer, Geo. Moeller; and for sergeant-at-arms, Edw. Quaid.

Directors

The following were nominated for membership on the board of directors: Albert Wagner, Wm. Frey, Philip Hering, Jr., Geo. M. Hicks, Harry Righter, Harry Levis, Wm. C. Hirst, Ernest Dyke, Frank Dykes, Jas. McStay, Calvin Doan, C. D. Eisemann, and W. E. Felter.

Grand, President

Morris Grand has been elected president of the Kings County Master Plumbers Assn. for 1936. Other officers are: Louis Friedman, vice president; Eli H. Raskin, treasurer; Ben Posner, recording secretary; Reuben Glickman, financial secretary; and Oscar Simon and Charles Davis, sergeants-at-arms. Members of the board of governors elected are: Michael Clark, Herman Rosenbluth, Ben Shusterman, Louis Molinari, T. C. Constantino, Harry Walker, David Loeber and Harry Weiss. The board of trustees is composed of: Alex. Rotker, Al Feldman, Saul Weithorn, Ben Stone and Morris Gottesman.

Chicago Annual

The annual meeting of the Plumbing Contractors' Assn. of Chicago will take place Jan. 8. Included in the program will be a dinner at the Congress Hotel. The business session of the meeting will be held following the dinner, and at this time the retiring president, Chas. E. Gawne, and the other officers will submit their reports.

Newark Votes

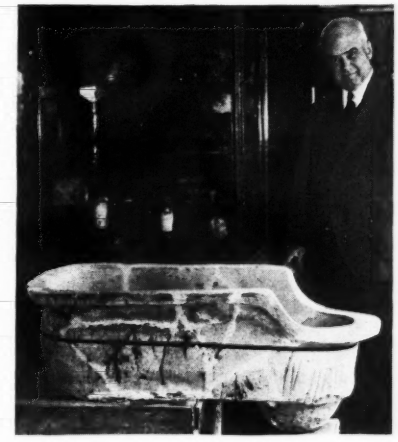
- *Action taken to continue all officers another year—Joseph C. Turbett is president*

At the regular meeting of the Master Plumbers Assn. of Newark, N. J., on Dec. 12, it was voted to continue all the officers for another year, in commendation of the work they have done during the past term. The official staff is composed of Joseph C. Turbett, president; Wm. Rigney, first vice president; Al F. Ruehl, second vice president; W. Brand Smith, secretary; James O. Lewis, treasurer; Fred Hettenbach, financial secretary; and Leo McSulla, sergeant-at-arms.

Ancient Tub

- *Bathtubs not so new, it seems —Here's an Olynthian tub of 400 B. C.*

While the United States is one of the chief sponsors of the bathtub among modern nations, the bathtub idea isn't



Dr. Robinson and the 2300-year-old Olynthian bathtub which has just been reconstructed at Johns Hopkins University

new. The Greeks had them too. This has been proven by the discovery of a 2300-year old tub in the ruins of Olynthus by an expedition sponsored by Johns Hopkins University and headed by Dr. David M. Robinson, professor of archeology of that university.

The tub was found in 65 pieces, presumably having been smashed up by the soldiers of King Philip of Macedon when they razed Olynthus in 348 B. C. It had lain in pieces at Hopkins since its discovery, until its recent assembly by Alexander Schulz, a graduate student of the University.

One did not recline in the tubs of ancient Olynthus, Dr. Robinson has pointed out, since the tubs were only long enough to sit in. They were shaped like modern tubs, however, with the exception of the fact that they had a bowl sunk in one end where the bather placed his feet.

The tub found, which was used by the Olynthians in 400 B. C., is made of red terra cotta covered with stucco. It has no drain, the water having been removed by baling and sponging. Olynthian houses did have plumbing, however, it is stated, and there were drains in the bathroom floors.

Detroit Meeting

A general mass meeting open to all licensed master plumbers of the City of Detroit was held by the Detroit Assn. of Master Plumbers on Nov. 29. President Edw. Harrigan addressed the group and stressed the importance of association and organization. Following the meeting a motion picture depicting new ideas for better homes was shown.

On Nov. 24 in Detroit, the Detroit Master Plumbers' Club held its Thanksgiving Party at the Hotel Detroiter. Joining the master plumber members at this annual affair were jobbers, manufacturers, and sales representatives. A buffet luncheon was served, after which there were cards, entertainment and dancing.

Strenger Re-elected

The Northeastern Plumbing and Heating League, which covers a large territory to the north of Chicago, elected officers for the year 1936 at a recent meeting. The officers are as follows, all of them being re-elected:

Henry Strenger of Lake Forest, Ill., president; William Green of Waukegan, Ill., first vice president; W. H. Gregg of Evanston, Ill., second vice president, and Alfred J. Chester, also of Evanston, secretary.

The next meeting of the League will be held at the Hotel Clayton, Waukegan, on Jan. 13. Meetings are held twice a month on the second and fourth Mondays, the place of the subsequent meeting being determined at each gathering.

The league is both a fraternal and a business organization, according to Secretary Chester. One of its main objectives is to bring together in one group the contractors in this large territory. It is felt that these meetings will help create a better understanding of mutual problems and will help elevate the plumbing and heating profession.

Accounting Lectures

At the present time bookkeeping and cost accounting procedures are being discussed at the league meetings. A series of lectures on these subjects is being given by an expert accountant. There has also been considerable discussion aimed at achieving more uniformity in the plumbing ordinances of the various cities and towns in the league's territory.

One of the most successful features at the business sessions, according to Secretary Chester, is the "Question Box." Many questions are placed in the box by members, Mr. Chester stated, and these have resulted in interesting discussions.

To be eligible for membership in the league, a contractor must be a member of the Illinois Master Plumber's Assn., the National Association of Master Plumbers and his local association,

provided there is one. Established heating contractors are also eligible provided they are endorsed by the master plumbers in their district.

The new league is entirely independent from the two master plumbers' associations serving the same territory, namely, the North Shore Plumbing and Heating Contractors' Assn. and the Lake County Sanitary and Heating Engineers Assn.

Approximately 80 per cent of the plumbing and heating contractors in the territory are members of the league, according to Secretary Chester. The attendance at the meetings held thus far has ranged from 45 to 54 members.

Klimback Elected

C. John Klimback of Essex Fells was elected president of the Assn. of Master Plumbers of Montclair, Bloomfield, Verona & Vicinity, N. J., Inc., at the regular monthly meeting of that organization held on Dec. 17 at Cedar Grove, N. J. Other officers elected were: Al Hurley, Bloomfield, vice president; Chas. Samuel, Montclair, secretary; Paul Zeim, Bloomfield, treasurer; Louis Alt, Jr., Glen Ridge, inside guard; L. Kievit, Montclair, trustee (three years); and John Heyrich, Montclair, trustee (two years).

Praised

Retiring President Henry Williamson of Montclair, who presided at the meeting, was greatly praised by members for his excellent work in this office. He had served as president for thirteen years.

The committee in charge of the meeting, composed of Joe Hughes and Judge Holler, had arranged a special duck dinner which was thoroughly enjoyed by the members. Christmas presents were distributed to everyone present by Secretary Chas. Samuel acting as Santa Claus.

Earlier Meeting

At an earlier meeting, held Nov. 26, L. E. Pelletier, assistant sales manager, W. A. Russell & Co., gave a talk on sales methods and answered questions of the members. He was accompanied by Fred Garder, New Jersey representative of the company. At the same meeting National Vice President Geo. H. Werner and Geo. Brenner, third vice president of the N. J. State association were guests. Mr. Werner made a plea for a drive for new members and Mr. Brenner urged the members to join "The Crusaders" on their trips throughout the state.

The January meeting of the association will be held in Essex Fells and the committee in charge will be: Ford Garrabraut, Foster Van Ness and C. John Klimback.

Comfort Study

- *A.S.H.V.E. research paper on summer comfort standards draws wide range of comment — Presented by Howatt at Chicago chapter meeting*

Livelier and livelier grow discussions among heating and ventilating engineers as to what are the correct standards for summer air conditioning. Occasion for the current discussions is the paper "Comfort Standards for Summer Air Conditioning" which is being read at chapter meetings of the American Society of Heating and Ventilating Engineers in all sections.

Written by F. C. Houghten, director of the association's laboratory, which is located at Pittsburgh, Pa., and by C. Gutberlet, his research assistant, the paper gives the results of a special study conducted at this laboratory last summer.

The paper was presented at the Dec. 9 meeting of the Illinois chapter of the A.S.H.V.E., held at the Sherman Hotel, Chicago, by John Howatt, national president of the society. Following are some of the salient features of the study which he pointed out:

Student Subjects

In making the study, five students of the University of Pittsburgh acted as subjects and judged their feelings of warmth at various atmospheric conditions in the psychrometric rooms of the research laboratory, located at the Pittsbugh Experiment Station of the U. S. Bureau of Mines. The paper states: "While the results of the study are not entirely conclusive as regards all phases of the subject, they are particularly conclusive in demonstrating that the effective temperature of the indoor condition is of much greater importance than the moisture content of the air inside, or the dry bulb temperature of the atmosphere outside. It is shown that air conditions ranging from 70 or 71 deg. to 74 or 75 deg. effective temperature give a feeling of comfort, as far as warmth is concerned, over a wide range of moisture content throughout the summer months, regardless of the prevailing outside temperature on any particular day."

In this connection, Mr. Howatt pointed out that the study indicated that from the standpoint of comfort the inside temperature can be independent of outside conditions if the subjects stay inside more than an hour.

Cool Shock

On the matter of cool shock on passing from a warm to a cooled atmosphere, the paper points out, "The study shows a universal feeling of coolness upon entering a cooled atmosphere from a hot condition. . . . Neither the magnitude or duration of the shock bears much relation to the atmospheric condition maintained or its contrast with the previous condition, but apparently depends upon the degree of sensible perspiration present upon entering." On the subject of relative humidity limitations, it is stated: "The observations which were possible during the study of feeling of warmth indicate rather conclusively, however, that relative humidity over a considerable range is of much less importance than had been supposed. In fact, the study indicates that a person having no knowledge of atmospheric conditioning in general and of the particular conditions pertaining around him seems to have little conception of the moisture content of the air. There was a tendency for those subjects in this classification to interpret as humid any hot condition where they perspired freely. Some such reactions were recorded

Among those in attendance at the final tournament of the season of the Plumbing Trades Golf Assn. of Chicago. Left to right, top row: M. Schulhoff, Peter M. Munn, secretary, Plumbing Contractors' Assn. of Chicago, J. Stanfield, John Blair, Dr. Cigrand. Ed. Mortimer, James W. Fettes and Frank Fabri.—Bottom row: William Redieske, chairman of the golf committee for 1935, A. C. Brown, William F. Hildeman (in rear), treasurer of the State association, Henry P. Reger, Charles A. Dreier, Porter West, Frank B. Hackett, Harold Burr, Howard Doyle, Porter West and T. H. Horan

when the relative humidity was actually as low as 30 per cent."

In the summary the statement is made that "The study indicates rather conclusively that the average person will become comfortable within 20 to 40 minutes after entering any atmospheric condition within an effective temperature range of 70 or 71 deg. to 74 or 75 deg. effective temperature."

General Discussion

Following the presentation of the paper there was a general discussion during which several modifying objections regarding the tests were pointed out.

Principal comments were: All the subjects were of one general character, young men of college age; it was claimed that the reactions of women or older and less robust people might have been far different. The subjects were interested in air conditioning and watched and recorded the findings—as a result psychology may have entered in and biased results. The tests were conducted in a sparsely occupied room, whereas normal problems concern a large number of occupants.

Speakers

Included in those who spoke were: John J. Aeberly, Otto W. Armspach, H. M. Hart, Dr. E. V. Hill, S. R. Lewis, E. T. Murphy, and V. L. Sherman. The meeting had as its guests members of the Air Conditioning Engineers, Chicago, students from Chicago Tech, and representatives of the local chapter of the A.S.R.E.

Seek License Law

Bristol, Conn. master plumbers have petitioned the city council to have journeymen plumbers licensed. The petition asks for an amendment to the city ordinance requiring each journeyman to pass an examination before he can work at his trade in Bristol and to pay a license fee of $2 a year, renewals to be $1 a year.

Journeymen at present pay no license while master plumbers and heating contractors pay a $10 fee yearly. Under the new plan master plumbers and heating contractors would pay $50 a year. An examining board will determine the ability of applicants in three classes of plumbing work.

Edward LaFond, New Britain, Conn. plumbing inspector has been conferring with the city council and master plumbers on the matter. It is also planned to prevent factory employees from installing oil burners in spare time without licenses and an examination. The basis of any effort of this kind must be public protection.

80-Acre Show

● *Cleveland to stage giant exposition featuring modern housing—4,000,000 expected*

Modern housing and the things which go to make the modern home more comfortable will be featured, according to present plans, at the Great Lakes Exposition to be held in Cleveland this year during July, August and September in celebration of the city's centennial year.

The unusual progress which as been made in the last few years in air conditioning, plumbing, heating and refrigeration will be illustrated and home builders will have an opportunity to see what a marvel of efficiency and comfort a new home can be.

The exposition, the largest civic event in the history of Cleveland, will be staged on eighty acres of downtown Cleveland lakefront. The huge Public Hall and Underground Exposition Hall and the Municipal Stadium will also be used. The purpose of the exposition is to present a cross section of the industrial, commercial, cultural, educational and social life and progress of the Great Lakes area. A minimum attendance of 4,000,000 is expected.

It is planned to present a constantly changing list of exposition entertainment attractions including athletic events, symphony concerts with famous soloists and guest conductors, fireworks, light operas, aquatic shows, championship swimming and diving contests and historical pageants. The exposition is organized on a non-profit basis. Any profits accruing from the undertaking will be devoted to some civic movement to be determined by the sponsoring committee.

Scull Re-elected

Clarence M. Scull of Camden was re-elected president of the Master Plumbers' Assn. of Camden County, N. J., at the recent regular meeting of that organization. All other officers also were re-elected, these being: Clarence Lind, Collingswood, vice president; Edw. F. Kelley, Camden, treasurer; James E. Bateson, Camden, secretary; and Jacob Dreher, Westmont, sergeant-at-arms. The following directors were re-elected: Wm. J. Kelly, Camden; Thos. J. Milnamow, Collingswood; and Ernest E. Limroth, Westmont.

One of the features of the preceding meeting of this association, this meeting being held Nov. 7 in the Walt Whitman Hotel in Camden, was the second and final reading of the "Birmingham Code" which was passed and becomes a law this month. Commissioners Frank J. Hartman, Jr., and George F. Brenner were present for the reading.

This code is similar to the code adopted by Birmingham, Ala., and calls for the placing of white stickers on new materials and a red tag on used or second hand materials. It provides that supply houses each week must file a report with the plumbing inspector of all sales made of tubs, lavatories, tanks, closets, sinks, furnaces, boilers, etc. Manufacturers who sell direct to the master plumber or to the consumer must file a similar report. The purpose of the ordinance is to assure that all installations are made by licensed master plumbers.

The committee that worked on this code was given a rising vote of thanks by the membership, this committee being composed of: Irving Chew, chairman; William J. Kelley, Henry Eichfeld and James E. Bateson, secretary of the association.

Introduces Crusaders

Clarence Scull, president of the association, presided at the meeting and introduced the visiting "Crusaders," who included Edw. Geyer of Englewood and Geo. Brenner of Orange, second and third vice-presidents, respectively, of the N. J. State association; Albert Ruehl of Newark, state trustee; Herman Baumgartner, past commander of the "Crusaders;" Wm. Harms of Englewood, Ira Morris, secretary of the Newark association; Lester Wake, N. J. State association field man, and J. R. "Shorty" Lewis of DOMESTIC ENGINEERING.

Mr. Baumgartner in his talk said that the trouble with the plumbers was that they have held themselves too cheaply. They have failed to tell the public enough about themselves and their industry. He advised master plumbers to prepare themselves so they could appear before civic clubs, church groups, and others and tell what this industry has done and is doing for public health.

Al Ruehl and Ira Morris then outlined the work being done by state and national associations.

The Camden association will give a dinner dance at the Birdwood Club, Haddenfield, on Jan. 22.

Welding Conference

Four hundred and fifty representatives of manufacturers and welding shops attended the Eleventh Annual Conference on Welding, which was held at Purdue University, Lafayette, Ind., on Dec. 5-6. This conference was one of a large number of educational conferences organized by the engineering extension department of Purdue

for the benefit of industries of Indiana.

The program consisted of ten papers on problems encountered by the welders in the field of gas and electric welding. Each paper was followed by discussion, at which time individual questions were answered.

Provision was made at the conference for exhibit of welding equipment and for demonstrations, twenty manufacturers being represented. Demonstrations included aluminum welding, bronze welding, hand and machine cutting, resistance welding, metal spray and tests of welding specimens.

Kings County

L. O. Koven & Brother, Inc., of Jersey City, N. J., played host to the Kings County Master Plumbers Assn. at the latter's headquarters, 1174 Bedford avenue, Brooklyn, N. Y., on December 4.

A. R. Hanson, sales manager of the Koven company gave an interesting talk on sales policies, and answered questions which were brought up on this subject. After the business session, a floor show and refreshments completed a very pleasant evening.

Jersey Banquet Date

The annual banquet of the Master Plumbers Assn. of Jersey City, N. J., will be held at the Hotel Plaza, Jersey City, on Feb. 15.

The committee in charge is composed of Louis S. Komoski, chairman, Edmund P. Ingram, Jas. T. Brennan, Robt. T. McDonald, Chas. Werner, John J. Corcoran, Geo. Cooper, Herman Haag, Fred Cook, Alfred J. Cross, Jos. Schneiderman, Robt. Entwistle and John A. Ward, with President Jas. J. Conlin as chairman ex-officio.

Club Elects Grosse

At its annual meeting held Dec. 4 at its headquarters, 2635 N. Kedzie Ave., the North and West Side Master Plumbers' Pleasure Club elected the following officers for the ensuing year: President, Paul Grosse; vice president, Al Grosch; financial secretary, H. H. Diedesch; recording secretary, Frank Pearson; treasurer, Henry Swade; and sergeant-at-arms, Emit Otto.

The following directors were also unanimously elected for a three-year term: Al Grosch, Fred Sorge, Leo Markowski and Frank Pearson. Following the business session the 35 members in attendance enjoyed a buffet luncheon and refreshments furnished by the entertainment committee of the club. The installation of officers, to which the ladies of the club will be invited, will be held early in January.

Soil Pipe

● *New simplified standards covering cast iron soil pipe and fittings adopted.*

The number of cast iron soil pipe fittings which are accepted as standard was reduced approximately 40 per cent through the adoption of the new American Standard for Cast Iron Soil Pipe and Fittings by the American Standards Assn. recently. The committee which developed the new standards was made up of representatives of engineering, manufacturing, building, sanitation, and scientific interests and was under the leadership of the American Society of Mechanical Engineers and the American Society of Sanitary Engineering. Its purpose was to reduce the number of standard fittings to a minimum consistent with the demands of the trade and yet to maintain a sufficient variety of fittings to meet requirements most efficiently. Nomenclature, materials, marking, inspection, and dimensions and weights are covered in the new standards.

The work of the committee was divided into four classifications: soil pipe, sizes 2 in. to 6 in.; soil pipe, sizes 8 in. to 15 in.; soil pipe fittings, sizes 2 in. to 6 in.; soil pipe fittings, sizes 8 in. to 15 in. In writing specifications for the smaller sizes, from 2 in. to 6 in., the specifications for cast iron soil pipe and fittings published in 1915 under the trade name of "Naco" were used as a basis. As these specifications did not include sizes above 6 in., the committee added specifications for sizes up to 15 in., making these specifications conform with the standards for the smaller sizes.

Of the total number of items which were being manufactured when the committee began its work, some 36 items, or approximately 40 per cent, were eliminated. The eliminated items are now considered obsolete or inconsistent with sanitary practice. It is pointed out that in proceeding with this simplification of the line of fittings the necessity of providing for the interchangeability of pipe and fittings made at present by the various manufacturers with that made to the new standard was given careful consideration by the committee.

Cites License Law

To encourage observance of the new plumbing license law adopted by the City Council of the City of Chicago Aug. 2, 1935, to conform with the requirements of the new Illinois plumbing license law effective July 1, 1935, a communication has been forwarded by the Plumbing Contractors' Assn. of Chicago to all of the real estate management firms, banks, receivers, members of the Chicago Real Estate Board and the like calling their attention to the fact that under this ordinance all plumbing work must be done under the supervision of a licensed master plumber. At the present time, and for a number of years past, these firms have been employing so-called maintenance men to do their jobbing and repair work.

The letter states that the outbreak of amebic dysentery a year and a half ago was attributed by a committee of prominent physicians and engineers appointed by Dr. Bundesen, to faulty and antiquated plumbing, permitting back siphonage of a number of fixtures, such as bathtubs and toilets into water lines; to chance breaks in sanitary sewers in and outside of basements, and to cross connections between water and sewer lines or between water lines carrying potable water and water potentially subject to contamination. Attention is also called to an article by Dr. Herman N. Bundesen, president of the Chicago Board of Health in which he states:

"One question which I would like to stress particularly, is the need of having this replacement and repair work done by competent plumbers, rather than by handymen, who in so many cases, are apparently responsible for conditions that now need correction."

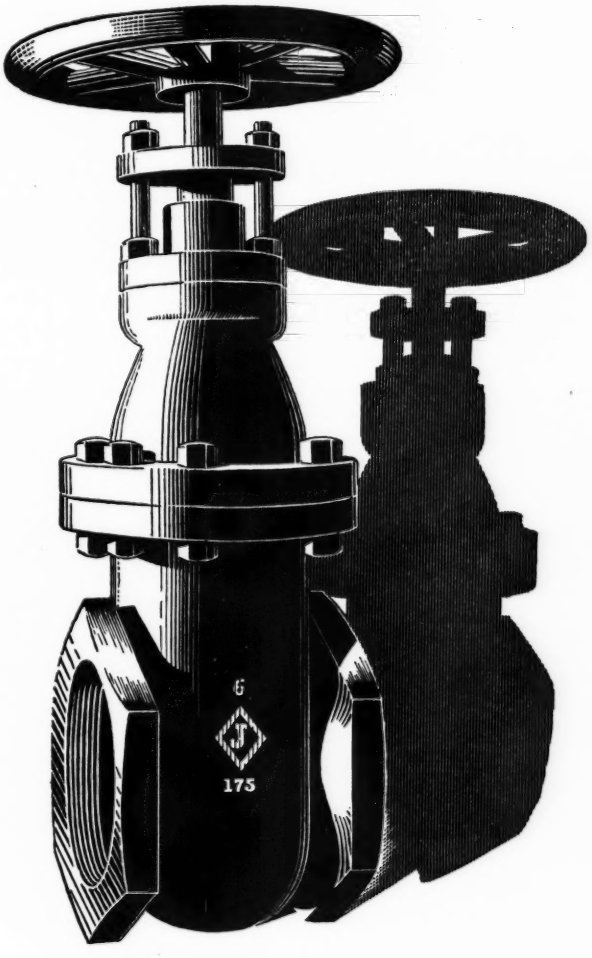
The letter then points out that according to Section 7 of the new plumbing license law in Chicago, "The Board of Health shall not approve any plumbing work installed in this city unless the master plumber installing such work has in effect a certificate as master plumber as provided by this ordinance, and unless each journeyman plumber employed in such installation has in effect a certificate as a journeyman plumber." Section 8A states that "Any person violating any provision of this ordinance shall be subject to a fine of not less than $25.00 and not more than $200.00."

Honolulu

Little or no effects of the worldwide depression were felt in "the islands," according to H. Wells, prominent master plumber of Honolulu, who returned to "The Crossroads of the Pacific" on the S. S. President Hoover, Nov. 29, after spending a month on the mainland, chiefly in San Francisco.

"We've all been pretty busy out there," said Mr. Wells. "Huge building projects, both public and private, running up into six and seven figures, have been under way for several years." Among the larger government jobs was the work at Wheeler Field, Immigration Station and quarters at

Jarecki Valves



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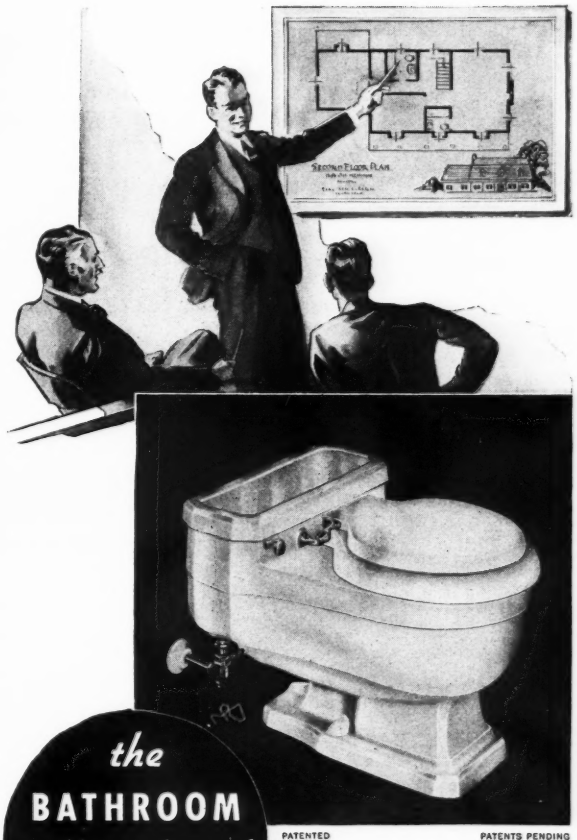

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the new Submarine Base. When asked about association activities, Mr. Wells stated there was no master plumbers association in Honolulu, "but," he added, "I wish we had one."

Morristown

Following its regular monthly meeting, held the afternoon of Dec. 18 in Morristown, N. J., the board of directors of the New Jersey State Assn. of Master Plumbers attended an evening meeting of the Morristown association which had been arranged by The Crusaders, an organization composed of men who are striving to make New Jersey an outstanding leader in association work.

John J. Kane of Morristown acted as chairman of the meeting but he presented the gavel to Past State President Bird of Elizabeth for The Crusaders' part of the session. Mr. Bird explained the object of the visit and expounded the good work being done by the national and state associations.

Principal speakers included State President Edmund P. Ingram, Herman Baumgartner of Newark and Ira Morris, secretary of the Newark association.

Organization

President Ingram's remarks were based on "organization." He pointed out the value of a substantial membership and what the national and state associations are doing to help the master plumbers.

Mr. Morris touched on state association work and two problems confronting members of the industry: distribution of material and an area agreement with the journeymen.

Herman Baumgartner then discussed the recent amebic dysentery outbreak in Chicago and urged the members to capitalize on this by using it as a means of demonstrating to the public what the master plumber means to his community in the matter of public health. Mr. Baumgartner said, "We must make the public 'plumbing minded.'"

He urged the members to become thoroughly familiar with what the master plumber means in the safeguarding of public health and to appear before their civic, church and school organizations and give them the facts.

In conclusion he suggested that the New Jersey association should urge the N. A. M. P. to get "another Col. Archer" who could, by personal appearances before various organizations and over the radio, preach the gospel of "the plumber protecting the health of the Nation" and to spread the story of the dangers of water borne diseases.

Introduced at the meeting were Vice President Edw. Geyer, Trustee Fred Baker, field man, Lester Wake, and J. R. "Shorty" Lewis of DOMESTIC ENGINEERING, each of whom made a short talk.

S. F. Hi-jinx

● *Winter golf is feature of annual Christmas meeting of San Francisco group*

A golf tournament on one of the finest courses in the west, followed by a delicious turkey dinner and an elaborate program of entertainment, drew 285 members of the industry to the California Golf Club on Dec. 19, the occasion being the seventh annual Christmas Hijinx of the Plumbing and Heating Club of San Francisco. Due to uncomfortable crowding at the 1934 party, this year's ticket sales were heavily restricted.

Perfect weather conditions, a vivid green, solid turf fairway from the first to the eighteenth, and a sign-up of 60 members and guests, contributed to one of the most enjoyable tournaments in the history of the club. Master plumbers from the bay district and executives and salesmen from the principal manufacturing and jobbing houses, whether members or guests, all competed for the ten blind bogey prizes. The commodious quarters at the California Golf Club provided ample seating space at dinner, which in itself was a festive affair. Under the direction of Elmer K. Ross, of Crane Company, an entertaining hour and a half was provided after dinner, while dancers, vaudeville teams and a sprightly chorus helped along with the merriment.

Attractive Prizes

An exceptionally attractive array of prizes was offered, including radios, electric razors, pen sets, bathroom scales, etc.

Following were Class A. Winners: low gross, Wm. P. Scott, Jr.; low net, R. J. Fuite; second low gross, J. J. McLeod; second low net, J. Heil. Class B winners: low gross, J. Forsythe; low net, D. L. O'Hair; second low gross, W. H. Rainwater; second low net, C. P. Hensley; guest low gross, P. McDonough. Blind bogey winners: J. W. Miller, W. Brown, H. T. Ferris, G. E. Greenwood, Chas. Higgins, B. F. Blair, Harry Haley, Thos. Douglass, W. R. Carpenter and F. W. Dougherty. The scores:

	Gross	Hdcp.	Net
Miller, J.	90	G	90
Lawson, H.	105	17	88
Kraus, E. J.	106	22	84
O'Hair, D.	88	19	69
Olsen, R. P.	104	28	76
Gabbert, F.	97	16	81
Meyer, E.	124	G	124
Gibson, W.	103	G	103
Gibbs, C.	106	G	106
Griffiths, W.	108	G	108
Haley, H. S.	100	24	76
Chittenden, F.	107	30	77
Garnjost, A. E.	111	G	111
Wooldridge, W. P.	106	21	85
Scott, W., Jr.	80	8	72
Elliott, F. F.	88	11	77
Fleming, J.	97	16	81
Eigle, Wm.	102	23	79
Jensen, W. M.	87	G	87
Douglass, T.	83	G	83
Bogue, B.	103	G	103
Grimshaw, J.	102	G	102
Hensley, C. P.	93	17	76
Forsythe, J.	87	24	63
Ahearn, E. J.	119	G	119
McLeod, J. J.	87	14	73
Rodems, J.	108	G	108
McDonough, P.	81	G	81
Joslin, W. E.	136	G	136
Carpenter, M. R.	103	G	103
Dougherty, F. W.	93	G	93
Greenwood, G. E.	104	G	104
Higgins, C.	99	17	82
Blair, B. F.	105	21	84
Camp, Jack	97	9	88
Woodson, M. B.	91	15	76
Rainwater, W.	91	22	69
Heieck, E.	90	8	82
Walters, B.	98	G	98
Clark, R.	102	15	87
Heil, J. F.	91	15	76
Rowley, G.	94	G	94
Shelden, J. C.	98	15	83
Fuite, R. J.	86	13	73
Taylor, W. A.	105	16	89
Nickerson, F.	97	20	77
Ceaser, C. F.	96	19	77
Aitchison, S. C.	112	G	112
Brown, N.	98	G	98
Derbyshire, W.	93	15	78
Cranston, A. R.	95	G	95
Cranston, J. V.	86	G	86
Strettmater, J.	87	G	87
Beber, E.	116	G	116
Brace, B.	110	G	110
Gladstone, H.	96	G	96
Ferris, H. J.	89	11	78
Newsom, B.	153	G	153
Judd, A. E.	109	24	85
Dallman, V. D.	131	G	131

At the outing of the New Jersey State Assn. of Master Plumbers. Left to right: E. H. Krekel, M. Barbour, and W. C. Day, all of the Stove Manufacturers Corp., Newark, N. J., and J. Harold Wallwork, Wallwork Bros. Inc., Newark, N. J. A complete story of this outing appeared in an earlier issue of DOMESTIC ENGINEERING

Camp Re-elected

The December meeting of the Master Plumbers' Association of San Francisco was featured by the election of officers for 1936, Jack Camp again being chosen to head the organization. J. J. McLeod, formerly corporation secretary, was elected vice president, while Chas. Noury succeeds himself as treasurer. N. J. Cohen takes Mr. McLeod's place as corporation secretary. The 1936 directing board also includes Harold Bertram, George A. Wara, Chas. W. Welch, Joseph Flaherty, Roy Jacks, H. B. Williamson, E. A. Balling, George Y. Morton, Kenneth Fahy, John W. Smith and Fergus Gomersal.

Slogan Contest

Just announced by Silent Glow Oil Burner Corp., Hartford, Conn., is a slogan contest. According to the rules of the contest, prizes are to be awarded for slogans which describe most effectively the advantages of this company's new oil burner.

Some 139 prizes are offered in all, varying from a first prize of $500 for the best slogan to 100 prizes of $1 each. Slogans must be submitted on official entry blanks, these to be furnished free by the company, and contestants may submit several slogans if they desire. The contest closes April 15, and prize winners are to be announced May 15.

A.S.R.E.

Air conditioning was the principal topic at the thirty-first annual meeting of The American Society of Refrigerating Engineers held at the Hotel Pennsylvania, New York City, Dec. 4-6. Some of the subjects discussed were: "Rational Application Procedure in Selecting Air Conditioning Equipment," "General Aspects of Air Conditioning," "Safety in Air Conditioning," and "Applications of Air Conditioning."

"Crusaders"

"The Crusaders," an organization composed of members of the New Jersey State Assn. of Master Plumbers, men who have the interest of the association and the industry at heart, started its fall campaign in November. This organization was formed for the purpose of creating interest in association work, increasing association membership and elevating the industry. Its members plan to make many trips throughout the State and to invite all members who can do so to join them.

It so happened that on the night that the fall campaign was inaugurated, New Jersey was hit by a terrible wind and rain storm. This, however, did not deter a band of eight "Crusaders" from making the trip from the northern part of the State to visit the Camden County association. The trip was made in two cars and the men received a hearty welcome from the officers and members of the Camden group on their arrival.

Obituaries

William A. Decker

William A. Decker of Grand Rapids, Mich., for over twenty years secretary-treasurer of the Michigan State Assn. of Master Plumbers, passed away at his home in Grand Rapids Dec. 24 following a ten weeks' illness. Besides being active in association work in Michigan, Mr. Decker for a number of years was a prominent figure nationally and will be remembered, particularly by some of the older members of the association, for his aptitude in debate at national conventions and for his leadership.

He retired from the plumbing business some years ago but devoted his time to the office of executive secretary of the Grand Rapids Master Plumbers Assn.

Mr. Decker, who was 60 years old, was born in Kent County, Mich., and spent his entire life in Grand Rapids and vicinity. He learned the plumbing trade with Weatherly and Pulte Plumbing Co. and started in business 37 years ago.

Gilbert P. McNiff

Gilbert P. McNiff, assistant vice president in charge of operations for National Tube Co., Pittsburgh, died in Pittsburgh Dec. 21. He was 50 years of age. Mr. McNiff had been connected with National Tube for many years. During the war he was a lieutenant colonel in the ordnance department having charge of munition manufacture in the Pittsburgh district.

Adolph E. Mueller

Adolph E. Mueller, formerly plant manager for Standard Sanitary Manufacturing Co., in Louisville, died at St. Joseph Infirmary on Dec. 26. He was stricken at his home four days earlier. Mr. Mueller, who was a brother-in-law of Theodore Ahrens, president of American Radiator & Standard Sanitary Manufacturing Co., had retired from business on account of his health 20 years ago, but maintained to the last a great interest in mechanics and invention. He is survived by a son, Theodore, also with the Standard Sanitary company; a daughter and three grandchildren.

Howard Neilson

Howard Neilson, Germantown (Philadelphia) contractor, for the past six years a member of the board of directors of The Master Plumbers' Assn. of Philadelphia, died suddenly of a heart attack on Dec. 27. Mr. Neilson had been an active member of the Philadelphia association for nearly a quarter of a century. Services were held Dec. 30 from his home in Germantown.

Charles H. Krueger

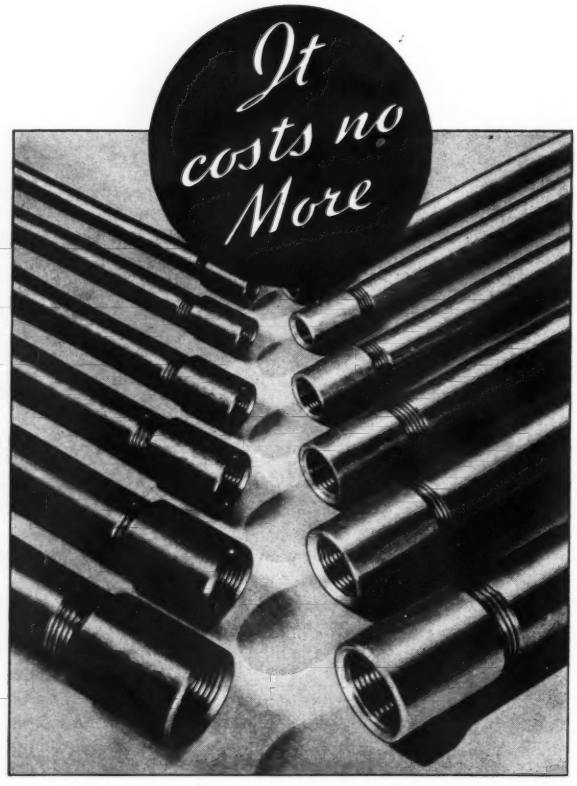
Charles H. Krueger, vice president of Chase Brass & Copper Co., Inc., died in New York recently. He was 56 years old. Mr. Krueger came to the Chase company in 1908 when this concern took over the Hungerford Brass & Copper Co., of which he was treasurer and at this time was appointed vice president in charge of the various Chase warehouses. He was a director and treasurer of the Copper & Brass Warehouse Distributors Assn.

David A. Westbury

David A. Westbury, South Bend, Ind., widely known figure in the plumbing and heating industry of the Middle West, the first vice president and one of the earliest presidents of the Indiana State Assn. of Master Plumbers, died in South Bend on Dec. 3 after an illness of two days. He was 81.

David A. Westbury

In recent years Mr. Westbury had remained active in the contracting business as a heating estimator and engineer for W. H. Burke in South Bend. He was an honorary member of the Indiana State association and had been identified with association activities in his own city for almost half a century.



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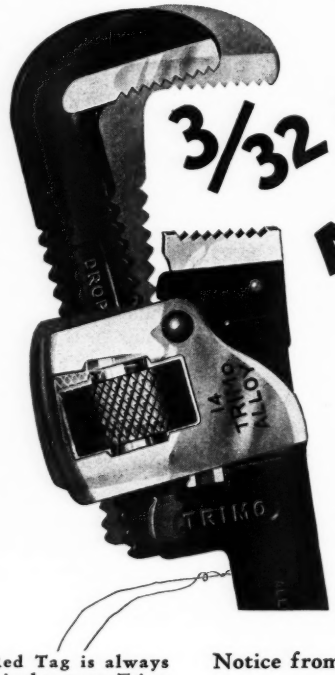

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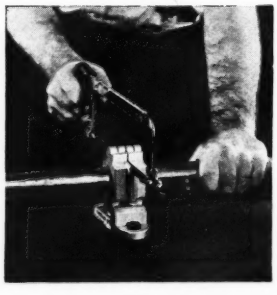
Notice from the illustration how Trimo has an added 3/32 of an inch in flexibility. This gives a tighter grip on the pipe and a quicker, easier release when you swing the wrench back to its original position.

To this feature add the fact that Trimo is made of the strongest chrome, molybdenum and nickel alloy steel—that the handle is drop forged—not cast. The reasons why Trimo is an outstanding wrench value.

PAYS FOR ITSELF ON FIRST JOB

New Trimo Sawing Vise does a perfect job of cutting and sizing thin wall copper tubing, plumbers, brass and plated tubing. Unqualifiedly endorsed by manufacturers of tubing. Pays for itself on first job.



TRIMONT MFG. CO., INC.
ROXBURY (BOSTON) MASS.

A. B. Chadwick

Ambrose B. Chadwick, for a number of years engaged in the plumbing business at 403 Federal St., Chicago, passed away suddenly Dec. 14 at his home in that city as the result of a stroke. The deceased, who was 72 years old, is survived by a daughter, Mrs. Clementine Archbold, and a brother, James N. Chadwick.

John W. Hennessy

John W. Hennessy, member of the Assn. of Master Plumbers of the Borough of Brooklyn, Inc., died on Dec. 20. Services were held from his residence, 7701 6th Ave., on Dec. 24.

F. H. Mason

Francis Howard Mason, manager of the furnace filter division of American Air Filter Co.. Inc., Louisville, Ky., died on Dec. 25.

William Donovan

William Donovan, plumbing and heating contractor of Sloatsburg, Rockland County, N. Y., died Dec. 10, the victim of an automobile accident. He was 59 years old. Mr. Donovan was a widely known and active worker in the Master Plumbers and Fitters Assn. of the County of Rockland, N. Y.

James C. Luke

James C. Luke, oil engineer loaned to the Anglo-Iranian Oil Co. by E. B. Badger & Sons Co., Boston, Mass., was one of the twelve victims who perished in the crash of the Imperial Airways liner City of Khartoum on Dec. 31. The plane plunged beneath the sea a few minutes short of an Alexandria, Egypt, landing.

Henry V. Conine

Henry V. Conine, who at one time was secretary-treasurer and manager of the former Western Valve Co., Chicago, Ill., died in Flushing, N. Y., on Dec. 16. Mr. Conine was a resident of Chicago until two years ago when he moved to the East.

George J. Spohn

George J. Spohn, plumbing contractor of Ambler, Pa., was killed suddenly on Dec. 16 when the motor car he was driving crashed into a ditch and was overturned a few miles south of Lansdale, Pa. It is believed that the steering mechanism of the car was disabled, causing the accident. Mr. Spohn was 43 years old. His wife, who was one of the other two occupants of the car, both of whom survived, suffered from shock.

August F. Pfemfert

August F. Pfemfert, assistant city plumbing inspector, Memphis, Tenn., died at St. Joseph Hospital Dec. 9. He was 61 years of age. He is survived by his wife, two sisters and two brothers.

Edward McDaniel

Edward McDaniel, veteran Litchfield, Ill., plumbing contractor and owner of the McDaniel Plumbing Co., in that city, died on Dec. 8 of heart disease. Mr. McDaniel had been a resident of Litchfield for 35 years and was 62 years of age.

Alfred H. Ames

Alfred H. Ames, retired manufacturer and banker, formerly a member of the firm of the Ames Iron Works, Oswego, N. Y., died in Los Angeles, Calif., recently. Mr. Ames was 68 years old. He left Oswego shortly after the Ames plant was purchased by Pierce, Butler and Pierce Mfg. Co. Mr. Ames was born in Oswego, N. Y., and was a son of the late Leonard Ames, who, with others, purchased the business now known as the Ames Iron Works.

John E. Jacob

John E. Jacob, aged 52, manager of the Baltimore branch of the National Radiator Corp. for the last twenty years, died at his home in Baltimore, Nov. 29. Mr. Jacob entered the employ of the former National Radiator Co.—parent company of the present corporation—in 1915, and was one of the oldest members of National's sales organization from the point of service. During the last few years he had served as manager of the Washington branch along with his duties as manager of Baltimore office.

E. W. Whittemore

E. W. Whittemore, formerly secretary and treasurer of the National Malleable & Steel Castings Co., Cleveland, died on Dec. 25 in that city at the age of 50. For the past year he had been in poor health. Mr. Whittemore became connected with the National Malleable company in 1898 following his graduation from Yale. He retired from the company a year ago.

B. H. Hill

B. H. Hill, for many years a member of the plumbing firm of Hill Bros. and Co., Waco, Texas, died Dec. 16 after an illness of four weeks and an operation two weeks prior to his death. He was 72 years of age and had been a resident of Waco for 54 years. He was a native of Navarro county, Texas.

New Trade Literature

Booklet on Unit Heaters

Bulletin No. A5018, recently issued by American Blower Corporation, of Detroit, Mich., is described as a unit heater catalog and engineering application guide. This booklet contains approximately 50 pages and consists of two sections. These are a catalog section and an application guide section. Besides rather complete data on this company's unit heaters, the bulletin contains a considerable amount of general information related to this type of equipment and its use.

Pamphlet from Kewanee

Kewanee Boiler Corporation, Kewanee, Ill., has available Catalog 88, a booklet covering boilers manufactured by this company for residence heating with coal, oil or gas. Illustrations are in color, and features of this equipment are set forth. Blue-print type drawings are presented to show the construction of the boilers.

Oil Burner Folder

Bulletin No. 16B, recently brought out by S. T. Johnson Co., 940 Arlington Ave., Oakland, Calif., features this company's oil burners. This is a four-page folder giving catalog data on several of these burners.

Boiler Booklet

The Babcock & Wilcox Company, 85 Liberty St., New York City, recently has issued what is designated as Bulletin G-8-B. This bulletin is in the form of a booklet and consists of 30 pages and cover. Its illustrations and

text show the applications, methods of shipping, details of construction and similar information regarding this company's boilers.

Maid-O'-Mist Issues Stuffers

Maid-O'-Mist, Inc., 43 E. Ohio St., Chicago, has just issued three envelope stuffers describing water feeders and automatic humidifiers. The equipment covered in each folder is illustrated as to construction and installation.

Gas Fired Boiler Folders

American Gas Products Corporation, 40 West 40th St., New York City, has brought out a letter-sized folder and two smaller pamphlets describing its automatic gas fired boilers. The folders illustrate the mechanical details and appearance features of these boilers.

Booklet on FHA Loans

"How to Have the Home You Want," is the title of a 24-page booklet issued by the Federal Housing Administration at Washington, D. C., telling of the why and how of FHA loans for building, repairing and modernizing. This booklet covers the subject briefly but thoroughly, giving all the information necessary to the obtaining of such loans.

Bulletin from Republic

Republic Steel Corporation, Massillon, Ohio, has brought out a small 12-page folder containing information on a rust- and corrosion-resisting alloy of its manufacture.

Catalog Revisions

Crane Co., 836 S. Michigan Ave., Chicago, has made available a set of revised pages for the Crane Plumbing Fixture Catalog, Architects' Edition. There are 106 of these pages, containing catalog information on lavatories, showers, fountains, sinks, laundry tubs, plumbing brass and heating equipment.

Evry-Use Issues Folder

Fan, mixers, blowers and pumps are featured in a pocket-size circular available from Evry-Use Products, Inc., 258 Canal St., New York City. This folder is done in catalog style, with illustrations of the equipment listed. It is of 15 pages and contains some tabulated information such as performance tables, friction of water in pipes and the like.

New Contractors, Business Changes

Atlanta, Ga.—O'Pry Heating and Plumbing Co., formerly of Montgomery, Ala., has moved its headquarters to Atlanta, where it now maintains offices in the Walton Bldg.

Detroit, Mich.—The Stevens Heating & Ventilating Co. has been chartered with a capital of $2,000 to engage in the plumbing, heating and air conditioning business at 92 West Rathbun Ave.

Detroit, Mich. — The Dickinson-Sterling Co. has been chartered with a capital of $6,500 to engage in the air conditioning and heating equipment business at 1311 Terminal Ave.

Englewood, N. J.—The Hudson Plumbing & Heating Service has opened a new showroom and shop at 30 N. Van Brunt St.

Joplin, Mo.—The Schulte Plumbing & Heating Co. has been incorporated by Lawrence Schultze and A. N. Schultze.

Kansas City, Mo.—C. E. Ekstrom has moved his plumbing and heating business from 114 W. 63rd St. to 6219 Oak St.

Kinston, N. C.—The Kinston Plumbing & Heating Co. has been incorporated with a capital of $50,000 by W. D. Stapleforce and Owen Daniel.

Los Angeles, Calif.—Perdue & Fitzpatrick, organized by A. L. Perdue and T. J. Fitzpatrick, have engaged in the plumbing and heating business at 5114 W. Pico Blvd.

Los Angeles, Calif.—The McRay Hardware & Plumbing Co. has engaged in business at 8608 S. Broadway under the management of T. D. McHale.

Los Angeles, Calif.—The Master Unit Heating System, owned by M. E. Childs and W. A. Merrick, has engaged in business at 1368 S. Cochran Ave.

Los Angeles, Calif.—The Associated Plumbing Service has been established at 515 N. Vermont Ave. under the management of S. J. Thomas.

Los Angeles, Calif. — The Cooke Plumbing Co. has engaged in business at 1896 Crenshaw Blvd. under the management of R. E. Cook.

Monmouth, Ore.—Olen B. Scrafford has engaged in the plumbing and heating business at 276 Craven St.

Pasadena, Calif.—The Consolidated Heating & Ventilating Co. has engaged in business at 29 E. Union St., under the management of J. M. Moriarty.

Portland, Ore.—Rushlight & Metcalf have engaged in the plumbing and heating business at 307 S. E. Morrison St.

Rosemead, Calif.—The Ohrmund Heating Co. has engaged in business at 1519 Valley Blvd. under the management of Frank H. Ohrmund.

San Francisco, Calif.—Robert E. Buckley has moved his plumbing and heating business from 1767A to 1834 Geary St.

Convention Dates

January 14-16—Illinois Master Plumbers' Assn.—Forty-third annual convention in Chicago, Ill., with headquarters at the Congress Hotel.

January 25—Pennsylvania State Assn. of Master Plumbers.—Second mid-winter meeting at Bethlehem, Pa., with headquarters at the Bethlehem Hotel.

January 27-31 — Fourth International Heating and Ventilating Exposition, in Chicago, at the International Amphitheatre.

January 27-31—A. S. H. V. E.—Forty-second annual meeting of the American Society of Heating and Ventilating Engineers, in Chicago, at the Palmer House.

January 28-30—Winter convention of the National Warm Air Heating and Air Conditioning Assn. in Chicago, Ill., with headquarters at the Hotel Stevens.

February 10-12—Annual convention of the Ohio State Assn. of Master Plumbers in Dayton, O., with headquarters at the Dayton Biltmore Hotel.

April 6-7—Colorado Society of Sanitary and Heating Engineers—Annual convention at Denver, Colo., with headquarters at the Albany Hotel.

April 14-18—Twelfth National Oil Burner Show—To be held at Convention Hall, Detroit, Mich. Headquarters will be at the Hotel Statler.

April 14-18—Oil Burner Institute.—Annual convention to be held in Detroit in connection with the Oil Burner Show.

April 20-21—Minnesota Master Plumbers Assn.—Convention to be held in Minneapolis, Minn., with headquarters at the Curtis Hotel.

May—Michigan Assn. of Master Plumbers.—1936 State convention at Detroit, Mich. (Exact date of convention to be selected later.)

May 12—South Carolina Master Plumbers' Assn.—Annual convention in Florence, S. C.

May 18-20—Pennsylvania State Assn. of Master Plumbers.—State convention at Allentown, Pa., with headquarters at the Americus Hotel.

May 25-28—California State Master Plumbers' Assn.—Annual convention at Del Monte, Calif., with headquarters at the Hotel Del Monte.

June—N. A. M. P.—Fifty-fourth annual convention of the National Association of Master Plumbers, in Buffalo, N. Y.

June 16-19—Annual convention of the National District Heating Assn. at Grand Rapids, Mich., with headquarters at the Pantlind Hotel.

October 12-18—A. G. A.—Eighteenth annual convention of: the American Gas Assn. in Atlantic City, N. J. (Alexander Forward, managing director, 420 Lexington Ave., New York City.)

Women

Conducted by . . . Dorothy Edwards

Holiday Parties

- *Women's auxiliaries in many sections stage big Christmas celebrations—Large attendances a feature*

December was a festive month for auxiliaries. Benefit card parties, dances and Christmas gatherings, a number of them staged in settings which included Christmas trees, Santa Clauses who distributed gifts, and holiday decorations, were reported by auxiliaries in many areas.

A universal feature of the reports of the festivities was the large number of members and guests who participated. As many as several hundred were present at some of the parties. Following are reports received on various gatherings:

Brooklyn Benefit

Every available inch of space in the meeting rooms in the Johnston Building was occupied by card tables on the occasion of the benefit card party, conducted by the Brooklyn (New York City) women's auxiliary, on Dec. 14. About 200 were present, including large representations of auxiliary and association members from the surrounding territory—Bronx, Queens, Manhattan and Nassau County.

Officers of the State auxiliary who attended were: President Mrs. William Metcalf and Secretary Mrs. Bloeth of Rockville Center; Vice Presidents Miss Alice Roth of Bronx and Mrs. Jacob Stockinger of Queens; Treasurer Mrs. Edward Pautch of Brooklyn, and Trustee Mrs. George Horn of Manhattan. Vice President George Arnone of Bronx represented the State association.

President Mrs. M. J. Kennedy and the other officers and the committee under the chairmanship of Mrs. M. Horowitz were most successful in their efforts to make their guests' evening a memorable one.

At a previous meeting of the Brooklyn auxiliary, in order that the attendance of members at the monthly meetings would be facilitated, it was arranged to alternate day and evening gatherings. The November meeting was the first held in the evening and was well attended. Mrs. Emil Seikman, of Staten Island, who has been working with the Richmond auxiliary, was present. The Brooklyn auxiliary now has a membership of 38, having added seven new members last year.

Xmas Celebration

The monthly meeting of the Women's Auxiliary of the Master Plumbers Assn. of Boston was held at the home of Miss Mary and Mrs. William J. Cleary, Brighton, Mass., Dec. 17, and was in the form of a Christmas party.

As each guest entered he or she placed his Christmas gift under the tree. After the meeting Mr. Sullivan, a master plumber, consented to be Santa Claus and presented each member with a gift. All the women brought something to make up baskets to be given to the needy and in this manner three baskets were filled with foodstuffs. A donation was also sent to the *Boston Post* Santa and also one to the veterans' fund for a Christmas stocking.

Jacksonville Party

The Women's Auxiliary, Jacksonville Assn. Master Plumbers, gave a most enjoyable party in the Odd Fellows Club during the Christmas holidays. The club room was gayly decorated in Christmas colors and a brightly decorated Christmas tree was the central feature. Several very amusing games and contests were played with everyone entering into a spirit of gaiety and fun.

Robert Engstrom played the role of a genial Santa Claus and distributed gifts to all present. Refreshments of hot coffee, sandwiches and individual Christmas cakes were served by a committee of the auxiliary members. Gifts were sent to several of the sick members and it was planned to send baskets of food to two needy families.

Members and guests present and enjoying the evening were Mr. and Mrs. Leon Davis, Mr. and Mrs. Ray E. Foxworth, Mr. and Mrs. D. A. Mayfield, Mr. and Mrs. H. C. Pepper, Harry Pepper Jr., Mr. and Mrs. Richard Kaszner, Richard Kaszner Jr., Mr. and Mrs. Harry Laubach, Lillian Laubach, Mr. and Mrs. Floyd, Mrs. Baumann, Mrs. M. C. Doty, Mr. Edward Rambach, and Robert Engstrom.

Many Guests

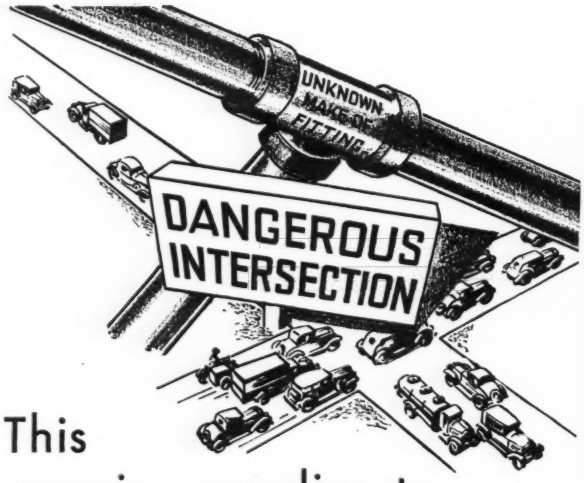
- *Santa Claus has a gift for everyone at big Orange Xmas party—Many of industry's celebrities present*

The Women's auxiliary to the Assn. of Master Plumbers of the Oranges, N. J., held its annual Xmas party on Dec. 20 at the Palmer House, East Orange, N. J. Dinner, dancing and entertainment of various sorts was followed by the "big finale," the entrance of Santa Claus. As for many years past, Santa's part was taken by Secretary Joe Berg of the Orange Master Plumbers Assn.

Mr. Berg distributed gifts to prominent members of the master plumbers association, women's auxiliary and representatives of the manufacturers, wholesalers and trade press. And with each presentation he made clever remarks that convulsed the entire gathering. Following the special presentation he gave a gift to every one present.

Guests

Among the celebrities on hand were the following: National Vice President Geo. H. Werner; State President Ed-



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mund P. Ingram; State Third Vice President Geo. Brenner; Past State Presidents Geo. L. Bird and Jas. O. Lewis; State Trustees Al Ruehl and Fred Baker; Louis Maier, president of N. J. State Heating Assn.; and Henry Williamson, president of Montclair association, and their wives. Included in those present was Lester Wake, field man of the State association.

Delegations

Other prominent guests were: Mrs. J. Miller Heidweiler, third vice president of the National auxiliary; Mrs. John J. Corcoran, chairman of the national sanitary committee; Past State Presidents Mrs. Henry Bunker, Jr., Mrs. Henry Williamson, and Mrs. Leslie Williams; State President Mrs. John Conard; State First Vice President Mrs. Louis Komoski; and State Treasurer Mrs. John Heyrich. There were delegations from Newark, Montclair and vicinity, North Hudson, Jersey City and Trenton.

The officers of the Orange auxiliary are: Mrs. A. F. Rueh, president; Mrs. Fred Hoffman, vice president; Mrs. T. Berg, secretary; Mrs. Geo. Brenner, treasurer; Mrs. Leslie Williams, recording secretary; and Mrs. Harry Krauss, Mrs. Geo. Fricke and Mrs. William Brown, trustees.

Committee in Charge

The committee in charge of the affair was composed of: Mrs. Harry Krauss, chairman; Mrs. Fred Hoffman. Mrs. A. C. Trapper, Mrs. Herbert Palmatier and Mrs. Leslie Williams.

On Jan. 9, the officers will be duly installed and on Jan. 21, the women's auxiliary will hold a bingo party in the rooms of the Master Plumbers Assn. of the Oranges. Mrs. Joe Berg will be chairman of that affair.

200 Attend

- *Queens auxiliary gives big benefit card party*

Some two hundred members and guests participated in the very successful benefit card party, held by the Queens (New York City) women's auxiliary at the Masonic Temple, Forest Hills, Long Island, Dec. 6. Among the celebrities who honored the affair with their presence were Past State President William Foley with Vice President Mrs. Foley of the local auxiliary; State Vice President George Arnone, of Bronx, with Mrs. Arnone; President M. J. Kennedy, of Greater New York City association, and President Mrs. Kennedy, of Brooklyn auxiliary; and President Mrs. Woodward Ebner, Bronx auxiliary, and Mr. Ebner.

President Joseph Mittasch of the Queens association was master of ceremonies and directed the activities of the guests. Included in the refreshments was a generous supply of delectable home-made cake.

After the dancing the guests were entertained by the tiny members of the Vinsens and Lamont Dancing School and by vocal selections by Mrs. Herzog.

At the annual election of officers of the Queens auxiliary, on Dec. 4, at the Knights of Columbus Hall, Jamaica, the following officers were chosen: President, Mrs. Charles Budrie, succeeding Mrs. Henry Billharz; vice presidents, Mrs. William Foley and Mrs. Joseph Mittasch; secretary, Mrs. George Doescher; and treasurer, Mrs. Charles Hochstatter.

Toledo Celebration

A regular meeting and Christmas party was held by the Women's Auxiliary of the Toledo Assn. of Sanitary & Heating Engineers, Toledo, O., on Dec. 17. At the business session all officers were re-elected for the coming year. Historian Mrs. Dan McDermott announced that she had the auxiliary history book ready and this will be kept available for the benefit of visitors.

The men joined the members at a Christmas party which followed the meeting, at which delicious refreshments were served and gifts were exchanged.

Newton Christmas

The Christmas party of the Newton, Mass., women's auxiliary was held Dec. 11 at the home of Mrs. M. J. O'Connell in West Newton. This is the largest meeting the auxiliary has held in some time, twenty-nine being present. Prior to the festivities a regular meeting was held. During the evening games were played, Mrs. R. T. Leahy sang, and a delightful collation was served. A collection was taken and added to the treasury. It was voted to send a donation to the *Boston Post* Santa Claus and also one to the Salvation Army.

The auxiliary gave a very successful card party on Dec. 2 at Bond's restaurant, Watertown, Mass.

Trenton Yule Party

Mr. and Mrs. William Lee were hosts at what has been designated by some of the Trenton, N. J., women's auxiliary as "one of the most outstanding events in the history of the auxiliary," when they opened their summer home at Medford Lakes in the Pines for the annual Christmas party on Saturday, Dec. 7.

The auxiliary members, 100 per cent strong, with their husbands, motored the thirty-five miles to the cabin where they keenly enjoyed the hospitality of their hosts. Christmas gifts were exchanged and the good will spirit prevailed throughout the day and evening. A rising vote of thanks was given to Mr. and Mrs. Lee.

The national auxiliary was represented by Third Vice President Mrs. J. Miller Heidweiler, who was present with Mr. Heidweiler. President Mrs. John Conard represented the state auxiliary, and was accompanied by Mr. Conard.

New Idea

- *"Waistline Party" held by North Hudson auxiliary*

An unusual idea was utilized when the women's auxiliary of North Hudson, N. J., met for its monthly card party on Dec. 10 in the rooms of the association in Weehawken. This meeting was called a "waistline party" and those attending had their waist lines measured and were charged a nominal fee per inch. With an eye for profits, the committee in charge did not do the measuring until after refreshments were served.

Officers for the coming year will be elected in January and will take office at a joint installation dinner held with the master plumbers' association.

Cincinnati Meeting

The Hotel Sinton was the scene of the monthly meeting of the Cincinnati women's auxiliary on Dec. 3. A delicious luncheon was served, after which the business meeting was held. The social hour was spent in playing cards, with attractive favors for all.

On Nov. 12 Mrs. Edward Frank was hostess to the auxiliary at an enjoyable party held at her home. After luncheon, which was served on two large, attractively decorated tables, cards were played.

Card Party Planned

The Women's Auxiliary of the Master Plumbers Assn. of Jersey City, N. J., will entertain the executive board of the New Jersey State women's auxiliary at a card party at the Plaza Tea Garden, Jersey City, on Jan. 15. The committee in charge is composed of Mrs. Louis S. Komoski, chairman, Mrs. John J. Corcoran, Mrs. Jas. J. Conlin, Mrs. Robt. Gilligan, Mrs. Wm. Mulholland and Mrs. Robt. T. McDonald.

Officers Installed

Mr. and Mrs. Arthur Kallberg were host and hostess to master plumbers and auxiliary members at the monthly meeting of the women's auxiliary of New Britain, Conn., held Dec. 12. The following new auxiliary officers for 1936 were installed: president, Mrs. Juddie L. Landgren; vice president, Mrs. Arthur Kallberg; secretary, Mrs. C. A. Andrews; treasurer, Mrs. A. H. Bergeron.

A rising vote of thanks was tendered Past President Mrs. Herman Feigenbaum for the splendid work accomplished under her leadership during her term of office. After the business meeting, cards were played, with high scores going to Mrs. A. A. Mills and Mrs. C. A. Andrews.

Dayton Invites

An open invitation has been issued by the Dayton women's auxiliary to all auxiliary members in the State to be its guests on the occasion of the annual convention of the Ohio State Master Plumbers' Assn., to be held in Dayton Feb. 10-12. Headquarters of the convention will be at the Dayton Biltmore Hotel. It is expected that many auxiliary members throughout the state will attend.

Recent activities of the Dayton auxiliary include a card party attended by the women and their husbands on Dec. 4 at the residence of Mrs. Carl Spatz. After the card playing, refreshments were served. At a later date, a Christmas party was held.

Detroit Election

Mrs. Laura Schonhofen was re-elected president of the Detroit women's auxiliary at its regular monthly meeting in December. All other officers were also re-elected, these being: Mrs. Harriet Nawrot, recording secretary; Mrs. Maud Strachan, treasurer; and Nellie Hughes, corresponding secretary. At the meeting plans were made for the customary charity work during the Christmas season.

During November the members of the auxiliary and their friends attended two very interesting parties. One of these was given by the *Detroit News* and included a tour through this company's plant, which was followed by some very instructive talks by members of the newspaper staff. Later tea was served. At another party of this auxiliary, at which a delightful luncheon was served and bridge was played, Mrs. Lee Hempel was hostess.

Bronx Activities

The November meeting of the Bronx (New York City) women's auxiliary deviated from its usual form and was designated as a special Thanksgiving social affair, being held Nov. 26, two days before the holiday.

An unique invitation, designed by Miss Alice Roth, past president, and Walter Baker, local association executive secretary, and bearing the signatures of President Mrs. W. F. Ebner and Corresponding Secretary Mrs. H. Kroepke, invited the members and their husbands to the meeting.

After a brief business session, the evening was given over to sociability. The radio set up by Woodward Ebner enlivened the occasion and the twenty-eight members and their husbands contributed their share of gaiety. Coffee, sandwiches and cake were served.

The Bronx auxiliary is busy with sanitation work and has reported that the newest chain store recently opened in midtown New York City has a handsome rest room and sanitary conveniences for the customers. It was suggested that this new store be indicated as an example when urging the older stores with lunch counters to install sanitary equipment.

Meeting Overflows

The card party given on Dec. 6 by the women's auxiliary of Montclair, Bloomfield, Verona and Vicinity, N. J., was so well attended that all could not be accommodated at the North End Improvement Association building in Bloomfield, and an "overflow party" was held in an inn across the street. Among those present were members from the Newark, Irvington and Orange master plumbers associations and auxiliaries. Mrs. Al Ruehl of Newark was an especially welcome visitor, as injuries had prevented her from attending the meetings for some time.

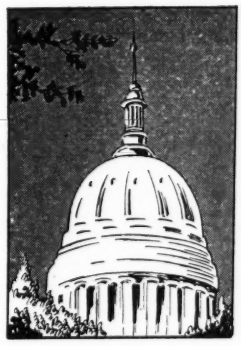
Mrs. Elizabeth Garritson is president of the auxiliary; Mrs. Ethel Hayes, vice president; Mrs. Lillian Heyrich, secretary; and Mrs. H. J. Williamson, treasurer.

Chicago Luncheon

With 21 members present, the South Side (Chicago) women's auxiliary met for luncheon at the Broadview Hotel, Nov. 6. President Mrs. W. Compton presided at the business meeting, a feature of which was the reading of a letter by Mrs. F. Hager, State president, from the National Past Presidents' Club.

Mrs. W. Ritter, chairman of the entertainment committee, made a report of a very successful party which was given at the home of Mrs. C. Watson on Oct. 26. Hostesses for the day were Mrs. L. Strauss and Mrs. C. Haigh. After the business meeting bridge and five hundred were played, with the high scores going to Mrs. J. Quinlan, Mrs. C. Watson and Mrs. J. Kalaher.

Pictures taken at the 53rd annual convention of the National Association of Master Plumbers, held in Chicago. Left picture, left to right: Standing, Fred Fleishauer, J. W. Stoner and Elmer Deckert, all of Buffalo, N. Y.; Sitting, John S. Hertel, H. W. Duschak of Zurn Mfg. Co., August Ebke, past New York state president and Wm. Ludlow, president of Buffalo association, all of Buffalo, N. Y.—Center picture: standing, H. L. Rose, president of Massachusetts association, Cambridge, Mass.; L. J. Hickman, Newton, Mass., and Niels Jepsen, West Newton, Mass.; Sitting, Mrs. H. L. Rose, past president of Massachusetts auxiliary; Mr. L. J. Hickman, Newton, Mass., and Mrs. N. Jepsen, president of Massachusetts Auxiliary, West Newton, Mass.—Right picture: Standing, A. H. Moore, president, A. M. Bateman, secretary, and Bill Damon, executive secretary, all officers of Oklahoma M. P. Association; Sitting, Mrs. A. H. Moore, president, Miss Estelle Burnside, vice president, and Mrs. A. M. Bateman, past secretary, all of Oklahoma City auxiliary, and Mrs. R. C. DeLautre, past president, Oklahoma State auxiliary



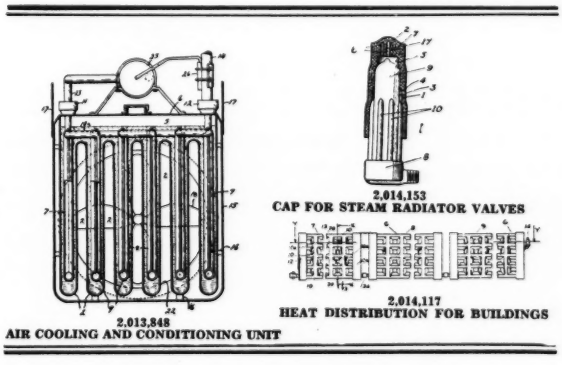
Patents

New Ideas . . . in Heating . . . in Plumbing . . .

Heating

2,013,848. Air Cooling and Conditioning Unit. Frederick J. Heideman, Detroit, Mich.

2,014,153. Cap for Steam Radiator Valves. George W. Taylor, East Milton, Mass.



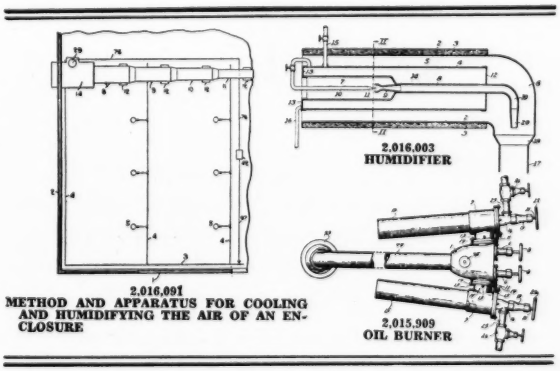
2,013,848
AIR COOLING AND CONDITIONING UNIT

2,014,153
CAP FOR STEAM RADIATOR VALVES

2,014,117
HEAT DISTRIBUTION FOR BUILDINGS

2,014,117. Heat Distribution for Buildings. Charles B. Simoneau, Lynn, Mass., assignor to Ralph S. Taylor, Melrose, Mass., and Francis V. McCarthy, Lynn, Mass., trustees.

2,016,091. Method and Apparatus for Cooling and Humidifying the Air of an Enclosure. Alfred F. Karlson, North Leominster, Mass., assignor to Parks-Cramer Company, Boston, Mass., a corporation of Massachusetts.



2,016,091
METHOD AND APPARATUS FOR COOLING AND HUMIDIFYING THE AIR OF AN ENCLOSURE

2,016,003
HUMIDIFIER

2,015,909
OIL BURNER

2,016,003. Humidifier. John M. Gantvoort, Sewickley, Pa.

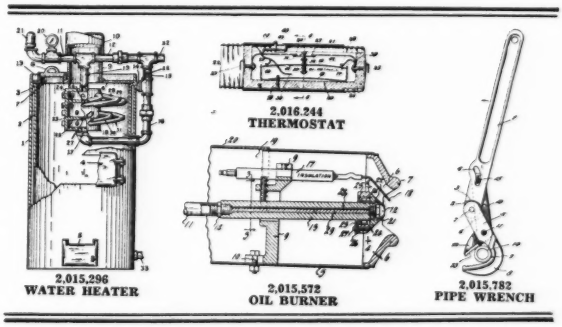
2,015,909. Oil Burner. John J. Ritthamel, Chicago, Ill.

2,015,296. Water Heater. Peter Swan, Portland, Ore.

2,016,244. Thermostat. Eli E. Gregory, Brooklyn, N. Y., assignor to Spencer Thermostat Company, a corporation of Massachusetts.

2,015,572. Oil Burner. Leolyn F. Spear, Westfield, Mass., assignor to Gilbert & Barker Manufacturing Company, West Springfield, Mass., a corporation of Massachusetts.

2,015,782. Pipe Wrench. Larkin Briles, Chico, Calif.



2,015,296
WATER HEATER

2,016,244
THERMOSTAT

2,015,572
OIL BURNER

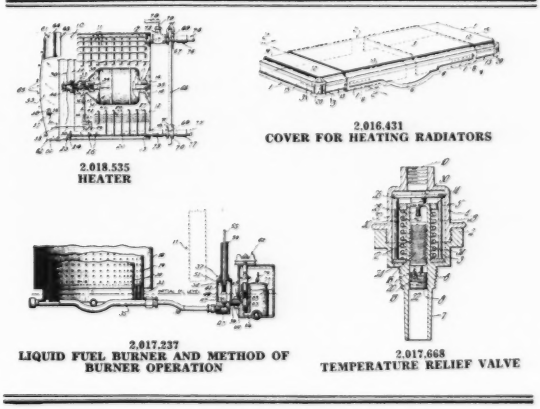
2,015,782
PIPE WRENCH

2,018,535. Heater. Anton Rober, Milwaukee, Wis.

2,016,431. Cover for Heating Radiators. Edmund Hofmann, Chicago, Ill., assignor to Herbert H. Krueger, Chicago, Illinois.

2,017,237. Liquid Fuel Burner and Method of Burner Operation. Harold L. Finley, La Porte, Ind., assignor to The Lonergan Manufacturing Company, Inc., La Porte, Ind., a corporation of Indiana.

2,017,668. Temperature Relief Valve. James H. Meagher, Springfield, Mass., assignor to The Chapman Valve Manufacturing Company, Indian Orchard, Mass., a corporation of Massachusetts.



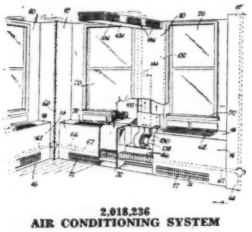
2,018,535
HEATER

2,016,431
COVER FOR HEATING RADIATORS

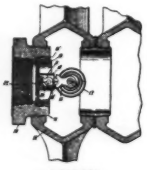
2,017,237
LIQUID FUEL BURNER AND METHOD OF BURNER OPERATION

2,017,668
TEMPERATURE RELIEF VALVE

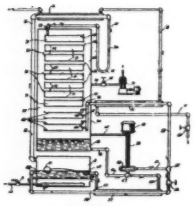
2,018,236. Air Conditioning System. James A. Space, East Orange, N. J., assignor to Doherty Research Company, New York, N. Y., a corporation of Delaware.



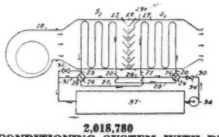
2,018,236
AIR CONDITIONING SYSTEM



2,019,303
TEMPERATURE CONTROL DEVICE



2,019,290
HEATING AND COOLING SYSTEM



2,018,780
AIR CONDITIONING SYSTEM WITH DEHUMIDIFIER AND REHEATER

2,019,303. Temperature Control Device. Chester I. Hall, Philadelphia, Pa., assignor, by mesne assignments, to General Electric Company, a corporation of New York.

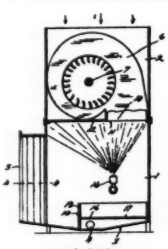
2,019,290. Heating and Cooling System. Kemper P. Brace, New York, N. Y.

2,018,780. Aid Conditioning System with Dehumidifier and Reheater. Robert H. Folsom, Glendale, Calif., assignor to Young Radiator Company, Racine, Wis., a corporation of Wisconsin.

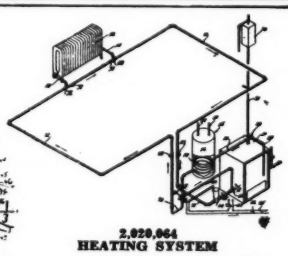
2,019,575. Air Conditioner. George W. Langford, Ann Arbor, Mich.

2,022,463. Air Conditioning Apparatus. Charles P. Erschen and Richard C. Jepertinger, Milwaukee, Wis., assignors to Air Conditioning Equipment Corporation, Milwaukee, Wis., a corporation of Wisconsin.

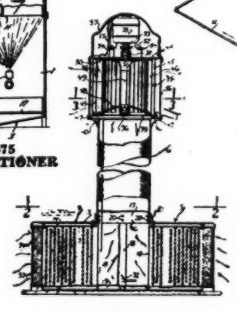
2,020,064. Heating System. Horace S. Kehm, Chicago, Illinois.



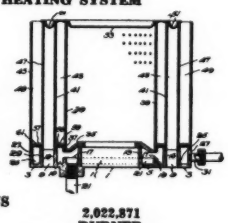
2,019,575
AIR CONDITIONER



2,020,064
HEATING SYSTEM

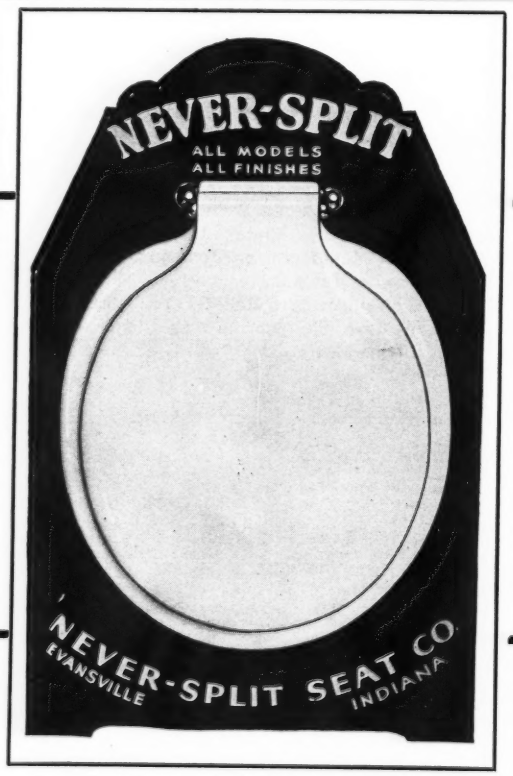


2,022,463
AIR CONDITIONING APPARATUS



2,022,871
BURNER

2,022,871. Burner. Rallston M. Sherman, Glastonbury, and Frederick F. Neumann, West Hartford, Conn., assignors to The Silent Glow Oil Burner Corporation, Hartford, Conn., a corporation of Connecticut.



Ask TODAY for our complete Catalog "K," and the Never-Split selling plan. Write . . .

There's Profit for You in NEVER-SPLIT SEATS

In fact, there's usually a double profit! . . . because the sale of a new Never-Split seat creates another satisfied customer and often leads to the sale of other bathroom fixtures. That's why it pays to push the sale of Never-Split. That's why we supply a powerful assortment of general selling helps. And it's time, RIGHT NOW, to use them!

FREE . . . . to help you sell—

This attractive new Never-Split display stand, which gets the product "out in front." A handy miniature construction model. Cross-sections, color samples, catalogs, folders. And they're all FREE to Never-Split dealers!

NOTE: Never-Split has always sold its products only to recognized Wholesalers of Plumbing Supplies who confine their sales to Plumbing Contractors of good standing. You may be assured that this 32-year-old policy will continue!

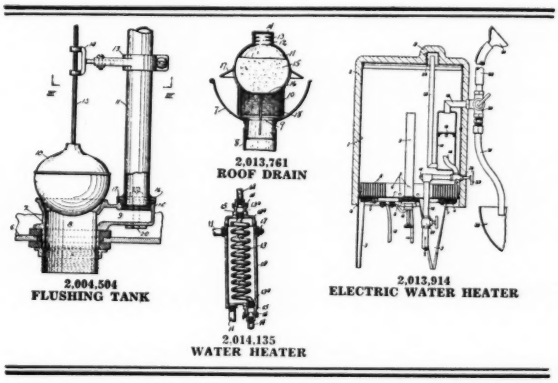
NEVER-SPLIT SEAT CO.

Evansville, Indiana, U. S. A.

Plumbing

2,004,504. Flushing Tank. Thomas A. Lyons, Pittsburgh, Pa.

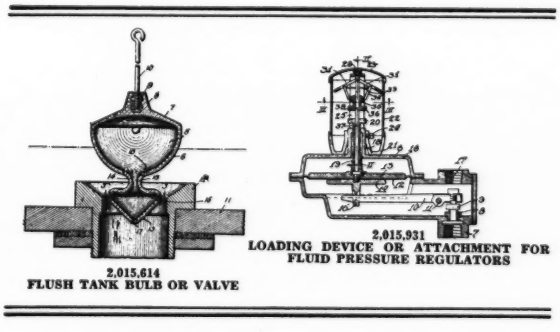
2,013,761. Roof Drain. Thomas A. Murphy, Middletown, Conn.



2,013,914. Electric Water Heater. Karl F. Hartmann, San Francisco, Calif., assignor of one-half to Morgan J. Doyle, San Francisco, Calif.

2,014,135. Water Heater. Abraham Kamenetzky, Brooklyn, N. Y.

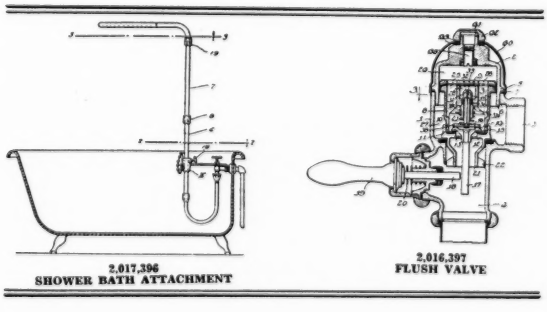
2,015,614. Flush Tank Bulb or Valve. Joseph C. Burnes, Eddystone, Pa.



2,015,931. Loading Device or Attachment for Fluid Pressure Regulators. William C. Groble, Anderson, Ind., assignor to Mueller Co., Decatur, Ill., a corporation of Illinois.

2,017,396. Shower Bath Attachment. Percy Brown, Chicago, Illinois.

2,016,397. Flush Valve. William E. Sloan, Chicago, Ill.



Conditions—

(Continued from page 53)

pacity to absorb. By nature, the building industry moves cautiously; by habit, it moves slowly. It has to keep faith with its customers. The building trades have always been sticklers for quality and have done their best to give satisfaction. With the exception of scattered examples of jerry-building, this has continuously been true.

The idea behind modern design lifted its head fully forty years ago and is just being given real application today. Air conditioning has been a matter mostly of prophecy until very recent years. Pre-fabrication is an idea upon which fortunes will be deluged before elements of a practical character emerge. The risks are high; the expense is tremendous; and innovations must be handled slowly. Progress has always been made, but it has been steady, not spectacular. It is possible to build a house today which so far outstrips the house of yesterday that there is no comparison.

SHORTAGE OF GOOD HOUSING EXISTS

For several years we have come through a period of pronounced underbuilding. Today, it is quite generally acknowledged that there is an actual shortage of good housing, yet building proceeds at a totally inadequate level when one might logically expect it to jump up by leaps and bounds. Building doesn't fail to react; it simply reacts slowly, though with gathering momentum. Already there has been improvement. In fact, for over a year now, activity has given evidence of a new and prolonged upward trend—with non-residential projects running somewhere near 10 per cent ahead of last year, and residential building well over 80 per cent ahead. These are not spasmodic increases, they are the result of consistent uphill progress.

Sales of manufacturers have increased correspondingly. The contracting trade has felt the stimulus. More and more, architects are becoming busy. The operative builder is active on a restricted scale. In general, real estate has improved both in value and in activity.

Looking beyond the building field, in every direction, favorable signs are visible. Practically all the indicators tell the same story. From whatever angle you look—the prospect is good.

Already a new concept of livability is beginning to exert itself. People are finding out ways and means to get more comfortable living out of the same cubic footage of housing. Ideas for better use of available space are appealing. Standards of sunlight and ventilation are being introduced. Invention and design are doing their best to speed the progress. Attempts to set up acknowledged yardsticks of material and equipment are already in effect. Insurance and uniform appraisals have been introduced.

The future prosperity of the building industry does not depend solely upon an effort to increase the available space for living, for storage or for commercial and industrial purposes; more and more it will depend upon a desire to raise standards. The industry will be called upon to give even more per dollar of investment, so the practical side of the market must not be lost to sight.

A 1933 survey of some 125,000 properties in 50 cities

revealed that the owners occupying them had average annual family incomes of $1,478, that each dwelling was valued at an average of $4,134, that 49 per cent of them were mortgaged to the average extent of 55 per cent. This set of conditions indicates why long term financing is important and why greater effort must be made to give greater value per dollar. Each head of a family is giving up something like 10 per cent of his whole life's income to own his home. Under such circumstances it should be a comfortable place in which to live.

With general conditions improving, with building itself making progress, with a great unsatisfied demand existent, with greater consciousness of the value of comfortable living, with new designs and ideas to attract, building stands at the threshold of its greatest development, provided it does not lose contact with its practical problems. But building, as we pointed out, does not fully control its own fate. Members of the industry, therefore, might make it a point never to overlook the bearing which all other activity has on building and never to pass up an opportunity to encourage outsiders to take an interest in building and its problems.

Hamilton

Rolland J., pres., American Radiator Co.

The national index of production has swung up to a point about halfway between the low of 1932 and the high of 1929; whereas the building index has recovered less than 20 per cent of the like distance. There have been voices crying in the wilderness these many years that general business recovery will not occur unless accompanied by recovery in building construction. If this be true—and I firmly believe it—then the present lag between the two must shortly be bridged. Without going into detail permit me to say that never within recorded knowledge has there been a situation such as now presents itself that has not presaged a major move forward in building.

And if out of the darkness we shall again come into a cycle of shining years we may fervently hope that something more than just another building boom may be our lot. We need better and cheaper materials and methods—and the research necessary to find them. We need cheaper and longer term finance—and to build in a manner to deserve it. We need a new concept of land and buildings that will justify the public's money on the basis of investment and not speculation. We need buildings that will earn money and not just serve as foreclosure-fodder. These are some of the things that will bring us to a more lasting prosperity.

Kohler

Walter J., pres., Kohler Co.

Continuing improvement in the volume of residential building, and hence in sales of plumbing and heating and of other building materials, may be expected confidently in 1936, in my opinion, though business in this field probably still will be much below the pre-depression peak.

It is now more than seven years since residential building began to decline. That decline amounted at point. In the two-and-a-half years of least activity, fewer homes were built, it has been estimated, than were destroyed by fire.

Meanwhile, population has increased, and new families have been established to the number of probably four or five hundred thousand annually.

The housing needs of the nation, particularly in the middle and lower price groups, thus have become so great that for some years there should be a much increased demand for new homes.

In addition, great numbers of existing homes (and non-residential buildings, too) need repairs and modernizing.

The up-swing in residential building has now gained some momentum and with housing requirements so large, that up-swing seems bound to continue almost irrespective of measures that might have a disturbing influence

Callahan

John A., gen. mgr. plumbing ware div., Briggs Mfg. Co.

America is swinging into the biggest building boom in its history.

At least 300,000 new homes will be constructed in the United States during 1936 at a cost ranging from $1,500,000,000 to $2,000,000,000.

This compares with about 60,000 new dwellings constructed during 1935 and an average of 30,000 annually during the depression years.

And yet this total of 300,000 new houses—which is below the average of the more extreme forecasts of 140,000 and 750,000, will be less than half of what actually is needed.

It is estimated that American home builders spent $500,000,000 within the last year for new dwellings. That is double the amount spent for home construction in 1934. Authorities agree, however, that from three to four times this amount will be spent for new homes during the new year.

A true picture of what this country needs in the way of new home construction and what the possibilities are during the new year can be gleaned from the fact that even during the depression years the United States population was increasing at a rate of 400,000 families every year.

Consider the fact, too, that from 1921 to 1930—a period of normal activity, and growth—the United States was building new houses at the rate of 450,000 annually.

One of the most significant findings on record within the last three months is the conclusion of a confidential report submitted to President Roosevelt by the Committee for Economic Recovery after an exhaustive survey of the building industry and the nation's need for new housing. This report declared that the nation will require the building of 750,000 new homes per year for the next ten years, or a total of 7,500,000 new homes as an actual need for the decade ending in 1945.

The report points out that during each of the next two years, approximately 650,000 dwelling units will be required from private enterprise alone. This does not include, of course, government housing projects. Thus, the estimate that the nation will construct at least 300,000 new houses during the new year seems conservative.

Think what this increasing activity in the building field will mean to industries, arts and trades allied to

building. Think what it will mean to thousands of skilled workmen, who have been on relief rolls.

Authorities in the plumbing industry agree that out of every dollar spent for building a little better than nine cents goes for plumbing materials and labor. In a "normal" or $6,000,000,000 building year, therefore, the plumbing trade, including both plumbing supplies and labor, does a business of $560,000,000. This does not include heating.

Thus, if $2,000,000,000 is spent for new housing during 1936, it means that nearly $200,000,000 will be spent on plumbing contracts. If the 1936 building market hits $3,000,000,000 as some authorities believe, about $270,000,000 should go into plumbing.

Highlights—

(Continued from page 55)

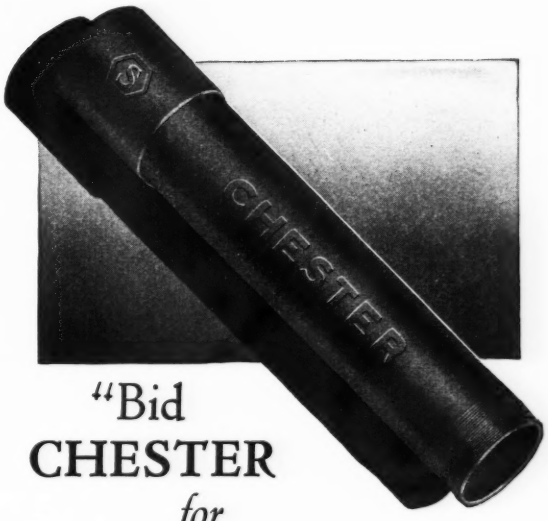
to prevent the expiration of the Title I phase of FHA in 1936.

• • • **Business on Parade** Still another highlight of 1935 is the resumption of the business analysis service for our readers which includes an index of current business for plumbing and heating. In addition to giving readers, at a glance, an indication of business conditions in our industry, significant trends, business news and markets are reported.

• • • **Reinspection** The year 1935 will stand out as important as a result of the action of the federal government in ordering the reinspection of plumbing in the federal buildings in New York and Detroit. A report of the program of this important development appears elsewhere in this issue. The action of the government should point the way to municipalities and private individuals in further reinspection programs designed to protect the health of the public through the detection and correction of faulty and dangerous plumbing installations.

• • • **Radiator Heat** Several developments during the past year have an important bearing on radiator heating. One has been the active efforts to enlarge the market for radiator heating through the reduction of radiator and equipment sizes made possible by forced circulation and higher temperatures within the system. Another has been the definite entrance of radiator heating in the air conditioning field through the announcement of equipment designed to provide air conditioning in connection with radiator heating. Still another important 1935 development for radiator heating has been preliminary work on launching a special campaign to promote it.

• • • **J. Brown Joneses** Last on this list, but by no means last among the highlights of 1935, should be mentioned the introduction of the J. Brown Joneses both to our readers and their customers. At the beginning of this article ar reproductions of this feature, which has been started to provide readers with what may be termed "consumer copy." These tell the story of established contractor-dealers and what the American public, in the form of the J. Brown Joneses, purchase when they deal through responsible contractor-dealers.



"Bid CHESTER *for* your customer's protection...and *your* profits"

So say "Chester" buyers everywhere! Why? Simply because experience is the best teacher and experience has proven that the years of trouble-free service for which "Chester" installations are noted benefit both the man who *pays* the bill and the man who *presents* it!

Next time you figure a "pipe job"—bid "Chester." Prove to your own satisfaction and your own profit that Chester Pipe is *real business insurance* for every man who installs it.

Because of our nearness to your market we can assure you of prompt and economical delivery of Chester Pipe. Write for full particulars.

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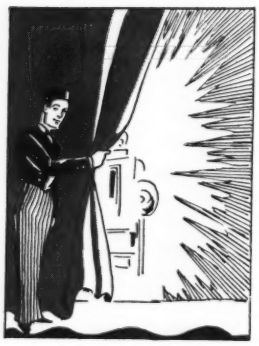
CHESTER STEEL PIPE



Products

New Developments . . . **Assist Contractor-Dealers . . .**

Automatic Electric Water Heater

Shown in the illustration at the upper left in the group below is an electric water heater which recently has been placed on the market.

The heating unit referred to as a part of this equipment is described as being removably inserted in a seamless vertical tube extending the full length of the tank. Two snap action thermostats with the bulbs immersed directly in water are pointed out as the control equipment. The manufacturer explains that these are adjustable over a range of from 120 to 180 degrees, and further points out that the factory setting is at 150 degrees. A three inch thickness of cork between the tank and the outer shell is the insulation provided. It is indicated that the piping is of copper, with brass fittings. One of the features is what is described as a cold water diffuser, the purpose of which is to prevent the mixing of incoming cold water with the hot water. It is understood that this water heater is available in either square or round type, built for operation on 230 volts, a.c.

The manufacturer is Automatic Electric Heater Company, Inc., located in Pottstown, Pa.

Adjustable Bolt Die Head

Simplicity and ease of adjustment are features of the item illustrated in the accompanying cut, described as an adjustable bolt die head.

According to the manufacturer, standard bolt threads, or an over or under adjustment of 1/64 in. may be obtained by loosening the four die head cover screws and turning the knurled ring until the dies are set to the desired size. The manufacturer mentions easy removability of the die segments for regrinding as an important feature of this equipment. It is stated that this die head is cadmium plated.

It is manufactured by The Toledo Pipe Threading Machine Co., 1425 Summit St., Toledo, Ohio.

New Lavatory and Cabinet Announced

Shown in the lower right illustration is a view of a combination cabinet and lavatory which recently has been placed on the market.

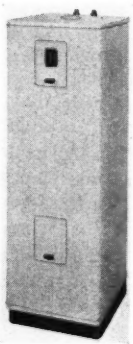
A description of this equipment indicates that the lavatory is of porcelain enameled cast iron, with a rectangular basin, while the cabinet is built of electrically welded steel. It is understood that the item is available in regular or acid-resisting enamel, in shades to harmonize with other fixtures. One of the features mentioned for the cabinet is that it is furnished with a recessed base, two inches high, which provides toe room for a person standing close to it.

The manufacturer is Crane Co., 836 S. Michigan Ave., Chicago, Ill.

Improved V-Type Belt

The accompanying illustration shows a V-belt which is described as being an improvement over an earlier line of drives.

This belt is described as being entirely oil proof, and features extreme cross-wise rigidity and length-wise flexibility. It is manufactured by The Dayton Rubber Mfg. Co., located at Dayton, Ohio.

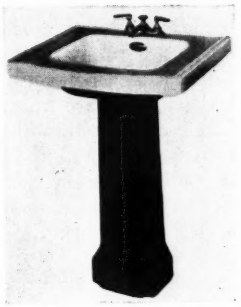


Electric water heater

Improved V-type belt

Adjustable die head

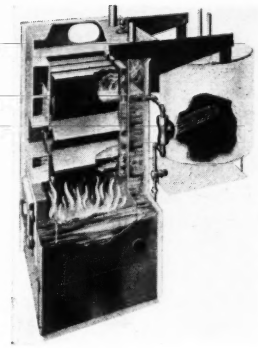
Lavatory and cabinet



New pedestal lavatory

Medium pressure generator

Improved steel boiler



New fixtures for bathrooms

New Pedestal Lavatory

A new pedestal lavatory is shown in the illustration at the upper left. This is designed to allow the use of group or individual fixtures.

The lavatory is described as being 24 by 20 in. in size, equipped with an easily removable overflow pipe, and available in a variety of colors and color combinations. It is stated that both the lavatory and the pedestal are finished in acid-resisting porcelain.

The maker is Briggs Manufacturing Company, Detroit, Mich.

New Fixtures for Bathrooms

The lower left illustration above shows equipment which is typical of what is said to be a complete new line of bathroom fixtures.

The manufacturer states that this line provides a suitable fixture for every type of installation. It is understood that redesigning has taken place in shower heads, lavatory spouts, pop-up knobs, tub spouts, handles and exposed waste parts. A variety of combinations of these fixtures is described as being available.

The Republic Brass Company, Cleveland, Ohio, announces this new line.

Medium Pressure Generator Announced

A small, medium pressure acetylene generator which recently has been announced is shown in the illustration at the upper right.

A 50 lb. carbide capacity is ascribed to this equipment, with a double rating of 100 cu. ft. of acetylene per hour. It is stated that this generator is designed for portable or stationary applications with any type of oxy-acetylene cutting or welding apparatus. A handwheel is provided at the top of the generator to allow control

QUIET

STARTING

Here's good news about noise—of particular value to users and manufacturers of Air Conditioning and other Service Equipment—where quiet is always an important factor!

When the new Century Polyphase Motors start, there is a conspicuous absence of the usual grunting, singing and whistling noises!

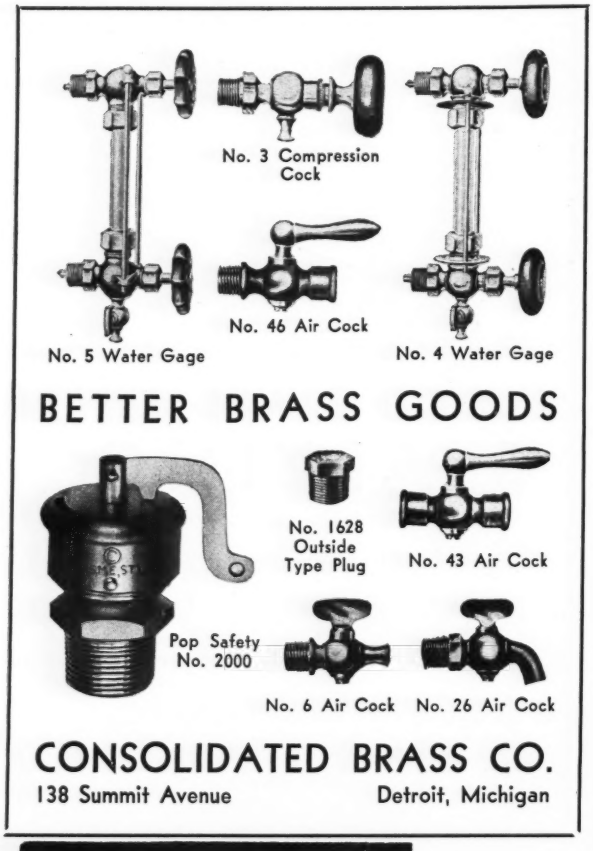
This substantial noise reduction has been achieved by new, improved features of design . . . Proof on request.

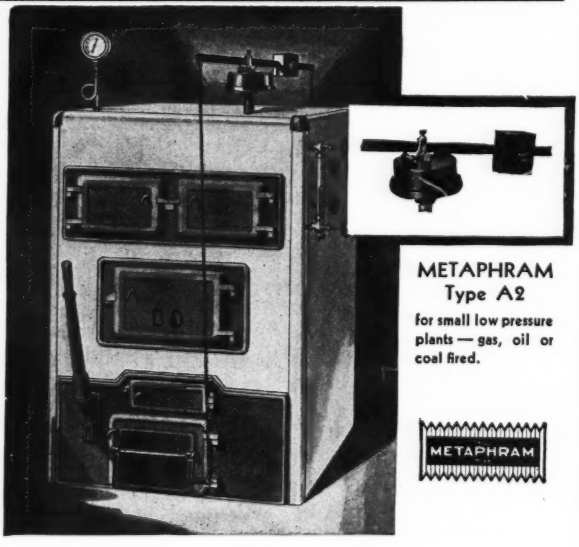
Another distinct contribution by Century!

CENTURY ELECTRIC COMPANY
1806 Pine Street , , , St. Louis, Missouri
Offices and Stock Points in Principal Cities

Century MOTORS

UP TO 600 HORSEPOWER





METAPHRAM Gradual Control
covers the entire range of domestic hot water and low pressure boilers and tank heaters, either gas, oil, or coal fired.
Full stock carried in New York, 210 E. 45th St.

Descriptive Bulletins on Request

NATIONAL REGULATOR CO.
2317 KNOX AVENUE CHICAGO

of the carbide feed, so that acetylene may be obtained at any desired pressure up to 14 lb., according to the manufacturer. Operating mechanisms, such as the feed control, carbide hopper, hydraulic back pressure valve and filter are described as being assembled within the dome-shaped top of the unit, which is designed to be tilted back when access to the interior is necessary.

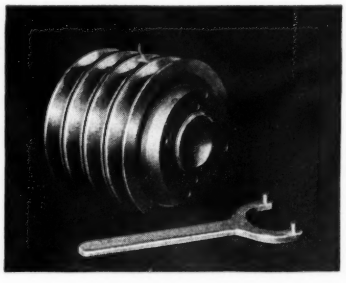
This new generator is a product of The Linde Air Products Company, 30 East 42nd St., New York City.

Improved Steel Boiler

The lower right illustration on the preceding page shows a steel boiler which is said to be designed especially for automatic firing.

Several features are listed for this boiler, including quick heating, slow cooling, summer and winter hot water by means of tank and submerged heating unit, and all steel construction. It is pointed out that the boiler, burner and tank are all enclosed within an attractive jacket finished in green. This completely jacketed boiler, it is indicated, is made in four sizes, with larger sizes being available in a sectional series.

This is a product of Waterfilm Boilers, Inc., 154 Ogden Ave., Jersey City, N. J.



New type of sheave

New Type of Sheave

The illustration above pictures a sheave recently placed on the market which is described as being especially applicable to fan drives for air conditioning units.

The salient feature of this item is that, according to its maker, the pitch diameter can be changed by a simple adjustment so as to give variations in speed as high as 15 to 25 per cent per sheave. If both sheaves of a drive are of this type, it is stated, the range of variation can be doubled. It is understood that these sheaves are available in two multi-groove types.

Allis-Chalmers Mfg. Company of Milwaukee, Wis., makes it.

New Screws for Sheet Metal Work

A screw for sheet metal work recently has been placed on the market which features what is called a recessed head described as being self-centering. It is stated that the recess in the head of the screw is tapered and designed to fit a tapered driver. Available with flat, round, oval and low fillister heads, this new screw has been introduced by American Screw Company, Providence, R. I.

This section gives a report of the latest news of selected automatic heat and air conditioning products. Sales helps such as these work to open up new and increasing markets for dealers

New Gas Heating Unit

The illustration at the left shows a view of a heating unit recently placed on the market which uses gas as fuel.

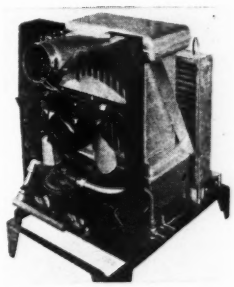
Silence of operation and compactness are numbered among the features of this heater. The maker has listed the working parts of the unit, and these include an aluminum heat exchanger, burners, a safety pilot control valve, gas pressure regulator and automatic supply valve, fans, motors, solenoid control valve and a limit control switch for cutting off automatically the gas supply in the event of overheating. Also listed as a safety control device is an automatic pilot switch which is to prevent the opening of the gas valve in case of power failure. Homes, stores, offices, apartments and factories are among the applications mentioned to which this unit may be adapted. One of the heater's salient features, according to the manufacturer, is the construction of the grille, which is said to be set at such an angle that the heat is deflected downward to the floor. It is understood that this unit may be obtained in any of several sizes, the smallest having an input capacity rated at 35,000 Btu.

Announcement of this unit has come from The Trane Company, of LaCrosse, Wis.

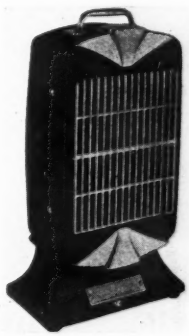
New Portable Auxiliary Heater

A new heater is shown in the illustration at the right. This is referred to as a portable hot water electric heater.

Compactness, lightness in weight and attractiveness of finish are listed as features of this new heater, the size being given as 13½ in. by 7½ in. by 6 in., and the weight as 12 lb. The main part of the unit, it is understood,



New gas heating unit



Portable heater

Even TEMPERATURES LEAD TO *Even* TEMPERS AND TO A GREATER VOLUME OF "HEAT EASY" SALES

Nothing you can offer your customer is likely to influence him to buy more readily than real home heating comfort. Nothing dissatisfies him more quickly than the lack of it. Unbalanced room temperatures, for example, are a frequent source of annoyance in the home not properly equipped to combat them.

EVEN TEMPERATURES

Even temperatures create even tempers . . . but they do more than that . . . they create sales. This is exactly what you may expect from "HEAT EASY" Dual Float Valves, particularly with the amazing new Vent Regulator. This feature now makes it possible for home-owners to regulate even the largest, remotest radiators to deliver heat exactly as they desire it.

TWO WAY VENTING

This regulator allows two way venting. When it is closed, permitting minimum venting capacity, the air is vented through orifice at top of regulator. By its gradual regulation the valve opens to increase venting through this orifice and through orifice in valve cap. Thus regulating the valve automatically adjusts speed of venting capacities to equal that of a cellar quick vent.

The "HEAT EASY" No. 4 Dual Float, Straight Shank, Quick Vent Valve. Available with or without Vent Regulator.

BREAKS ITS OWN VACUUM

In design, construction and operation the "HEAT EASY" Dual Float Valve adheres strictly to the theory "Science always wins." Its mechanical operation is such that, when the radiator cools, upper float of valve drops against atmospheric pressure to its original position, breaking the vacuum in the system. The entire system is instantly ready to vent freely on the next cycle. Its simple construction eliminates all complicated features.

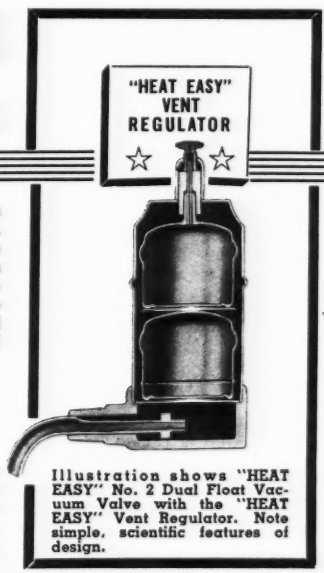


Illustration shows "HEAT EASY" No. 2 Dual Float Vacuum Valve with the "HEAT EASY" Vent Regulator. Note simple, scientific features of design.

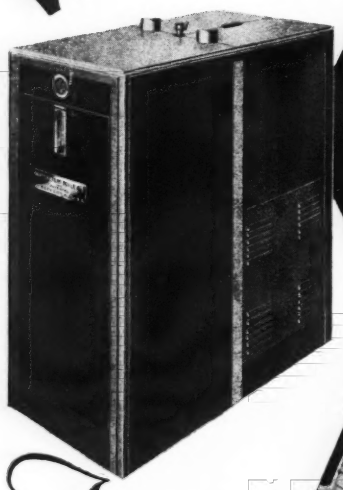
"HEAT EASY" Dual Float Valves are sold only through recognized wholesalers. There are a few territories still open for sales representation.

SLATER MFG. AND ENGINEERING COMPANY
230 CONGRESS ST., BOSTON, MASS.

HEAT EASY DUAL FLOAT VALVES

"Science Always Wins"

WATERFILM BOILERS



THE HEART OF A WELL HEATED HOME

THOUSANDS OF HOME OWNERS AND ARCHITECTS WILL SEE **WATERFILM** ADVERTISING—

WATERFILM BOILERS have won the praise of satisfied users throughout the country. They have found that not only is it doing everything claimed for it in giving them quick heat and domestic hot water all year round, but it is also cutting fuel bills as much as 50%.

This is an opportunity for live dealers to get on the band wagon and sell a boiler that is the outstanding one on the market today.

National advertising in House & Garden to reach the home owners and in Architectural Forum to reach the architect who designates the type of installation, is now being conducted for WATERFILM BOILERS. Also supplied are dealer help folders and mats for your newspaper advertising—in other words complete cooperation to help sell more WATERFILM BOILERS.

Write today for full information regarding the WATERFILM agency in your territory.

See the WATERFILM display at the Fourth International Heating & Ventilating Exposition in Chicago—Booth 614—Week of January 27.

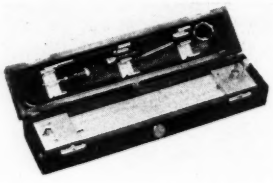
WATERFILM BOILERS, INC.

154 Ogden Ave. :: Jersey City, N. J.

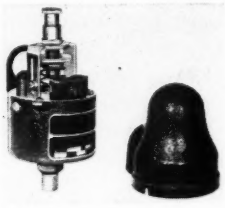
THE FLASH BOILER STABILIZED

consists of a copper core, while the heating element, rated at 8.5 amperes at 115 volts, is entirely immersed in the liquid in the bottom tank. An a.c., 110 volt, 60 cycle motor and a 6 in. aluminum fan are listed as part of the equipment. The liquid used is described as non-freezing and is said to be sealed in, with the idea of eliminating the necessity of renewing the supply. It is stated that the unit is regularly equipped with 8 feet of asbestos cord and a rubber wall plug. The housing is listed as heavy gauge steel and the base is of cast iron. The finish for this new portable auxiliary heater is described as black crackle with chromium trimmings, handle and grille.

Hexcel Radiator Company, of Racine, Wis., is the manufacturer of this heater.

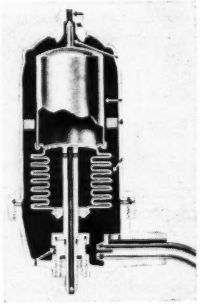


New air meter

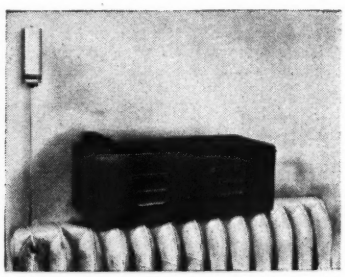


New pressure switch

Venting valve



Automatic humidifier



Air Meter Announced

The equipment shown in the upper left illustration, which just recently was placed on the market, is referred to as an air meter.

This meter has been designed for the direct measurement inside of ducts of pressures and vacuums ranging from .00125 in. to .50 in. of water, and velocities in feet per minute of from 140 to 2,832. Features listed for it are lightness in weight, compactness, sensitivity and reliability.

This meter is described as being self-contained in its own wooden case, with the zero and leveling devices as integral parts of the equipment. It is understood that to take a reading inside a duct, the metal testing tube, which is connected to the scale by a rubber tube, is inserted in a small hole in the duct. The action of the moving air in the duct registers the effect.

This air meter is made by Julien P. Friez & Sons, Inc., Baltimore, Md.

New Pressure Switch Announced

The upper right illustration pictures a pressure switch which has just been placed on the market, and which features simplicity, accuracy and dependability.

This item has been designed for the automatic control of pressure in steam heating boilers and similar applications. The operation of this switch is described as follows: Motion resulting from pressure exerted on the bellows is transmitted directly to a specially constructed disc which actuates the contacts with a positive snap-action. Bellows, disc and contacts are all enclosed in the bottom case. It is understood that the switch is adjustable both as to cut-in setting and differential, and that these settings are independent of each other. The removable cover is designed to prevent accidental changing of these adjustments. It is pointed out that this switch is available in two- or three-wire types to accommodate all commonly used circuits for either low voltage or full line-voltage service, and that its cut-in pressure and differential ranges cover the majority of low-pressure heating applications.

The manufacturer of this new switch is Spencer Thermostat Company, 34 Forest St., Attleboro, Mass.

Controlled Port Venting Valve

Shown in the accompanying illustration at the lower left on the preceding page is a cut-away view of a radiator air valve which is said to be available in both vacuum and non-vacuum types.

The main feature of this valve is the bellows which actuates the valve pin, opening or closing the venting port. It is stated that atmospheric pressure is constant in this bellows, elongating it and closing the vent when the internal pressure of the valve becomes less than atmospheric. Other features listed for the valve are come-apart construction and a float seal to prevent water leakage.

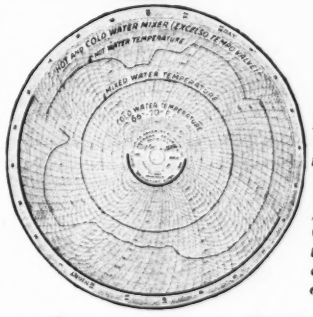
This is a product of Anderson Manufacturing Company, 195 Albany St., Cambridge, Mass.

Automatic Humidifier

The humidifier shown in the illustration at the lower right on the preceding page is described as being entirely automatic in operation.

The cabinet containing this unit is 18 in. long, 7 in. high and 8 in. wide. The operating mechanism, it is understood, consists of a motor with a rated speed of 3500 r.p.m., fitted with a double shaft to one of which is fastened an aluminum fan, with a cylindrical brush at the other end. A water container also is situated in the brush end of the unit. The idea is that as the brush revolves at high speed, there will be a tendency for the water to form spouts which, when they come in contact with the bristles of the brush, will be whipped into a fine mist or fog. Inasmuch as the unit should always be placed on a radiator or next to a warm air register, the fan may take heated air directly into the cabinet, force it through the chamber containing the fog, where it is intended that cleaning and humidification will take place, and out into the room. It is stated that the fan takes in air at the rate of about 80 cu. ft. per min., and that

NEW EXCELSO TEMPO MIXING VALVE



Above: Cross Section of Excelso Tempo Mixing Valve—showing new type of construction.

Left: Recording Thermometer Chart showing constant temperature of water delivered for use despite wide variation of hot and cold water delivered to the valve.

Your Fastest Selling Item in **1936**

HERE is a new mixing valve that users of both domestic and industrial hot water supplies are ready to buy—and buy quickly. A mixing valve that will actually control hot water temperatures within narrow limits.

Here Are the Exclusive Features that make the 1936 demand for Excelso Tempo Mixing Valves:

1 Simplified design and construction. Built to function under long, continual service.
2 Operation involves new principle of thermostatic control, assuring accuracy despite highly variable conditions.
3 Outlet temperatures adjustable from 120° F. to 160° F. Perfect domestic temperature. Eliminates scalding accidents.

The field for quick sales and profits with Excelso Tempo is wide open now. Homes, apartments, hotels, clubs, public buildings, industries—are waiting prospects.

EXCELSO PRODUCTS CORPORATION
57 Clyde Ave., Buffalo, N.Y.

FILL IN THE COUPON

EXCELSO PRODUCTS CORP., 57 Clyde Ave., Buffalo, N.Y.

Send us prices and specifications on the New Excelso Tempo Mixing Valves. We want to get our share of this business—quick.

Firm .....

Address .....

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The International Heating & Ventilating Exposition

in the

INTERNATIONAL AMPHITHEATRE
CHICAGO, ILLINOIS

January 27 to 31, 1936

See Our Exhibit Booth No. 537

Sterling Vacuum-Vapor Heating Specialties
Sterling Vacuum Pumps.
Sterling Temperature Control Systems
Sterling Instant Water Heating System

Special New Features

Sterling No. 22 Bellows Radiator Valve
Sterling No. 7 Bellows Thermostatic Trap
Sterling Instant Water Heater
Sterling Mixing Valve
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A complete line of heating specialties for steam and water heating.

STERLING ENGINEERING COMPANY
3738 N. Holton Street
MILWAUKEE WISCONSIN

FOR YOUR *Convenience*

COPALITE is available in convenient, collapsible tubes, packed 36 to a carton. COPALIT is supplied in quart cans. If you can't obtain your supply from your wholesaler, write us.

A NEW KIND OF RELIEF from WASHINGTON

From the nation's capital comes a remarkable new kind of relief for the contractor . . . a positive relief from all troubles caused by faulty gasket and pipe connections. This is the kind of relief which COPALIT and COPALTITE offer every contractor who is concerned with the installation of pipe lines, air conditioning systems, automatic heating equipment and all similar jobs. These compounds offer them this and MORE. Their use makes it possible for them to guarantee each job against failure.

When he applies COPALIT and COPALTITE to the points in the system requiring insulation or packing against high pressures, cold, heat, gases, freon, acids and other fluids, it's a relief for the contractor to know beyond a shadow of a doubt that the connections are sealed TIGHT. High or low temperatures . . . extreme pressures . . . contraction . . . expansion . . . vibration . . . these have no effect on COPALIT or COPALTITE. Always elastic, they set quickly on joints. Their use is low-cost insurance against pipe thread and gasket troubles.

NATIONAL BOILER IMPROVEMENT CO.
4100 GEORGIA AVE. WASHINGTON, D. C.

★ COPALTITE ★

★★ COPALIT ★★

this unit will humidify the air in an average 8 to 10 room dwelling, or 25,000 cu. ft. of office or factory space. It is indicated that the motor operates on an ordinary 110 volt circuit, using current corresponding to that consumed by a 40 watt light bulb.

This unit has been announced by Merion Sporting Goods Mfg. Corp., 127 S. Fifth St., Philadelphia, Pa.

Domestic Oil Burning Boiler

What is described as a cast iron, sectional, oil burning boiler designed for use in small homes is illustrated in the photograph at the left below.

It is understood that this boiler is built for installation with either gun or rotary type burners and is available with a water heater and a built-in boiler protector. A double flue gallery is provided to allow adequate gas travel, and fins placed parallel to the line of travel are intended to increase the exposed surface of the boiler. Capacities of 355 to 755 sq. ft. of installed steam radiation and 570 to 1200 sq. ft. of hot water radiation are listed for this boiler, which is described as being available in six sizes. The enameled steel jacket is understood to be finished in chrome green and insulated against noise and heat.

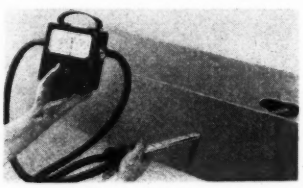
This boiler has been placed on the market by American Radiator Company, 40 West 40th St., New York City.

For Measuring Duct Velocities

Shown below in the accompanying illustration at the upper right is equipment for measuring the velocity of air in ducts.

The feature of this equipment is the jet, attached to a velocity meter by a flexible hose, which may be inserted in the duct as shown. Operation of the item is based on the idea that air will enter a suitable orifice

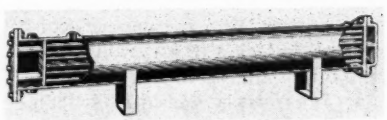
Domestic oil burning boiler



For measuring duct velocities

Improved air conditioner

Fuel oil heating equipment



or orifices in the jet and pass through the tube to the meter, where a direct reading of its velocity can be taken by the observer.

It is understood that jets of various sizes and types are available for exploring velocities in obscure locations, measuring air leakage from ducts or through building walls, velocities through irregular or slotted grilles, and the like.

Announcement of the equipment has come from Illinois Testing Laboratories, Inc., located at 141 W. Austin Ave., Chicago.

Fuel Oil Heating Equipment

The preheating of fuel oil in order to reduce its viscosity, making easier the atomization of the oil by the burner, is the purpose for which the equipment shown at the bottom of the preceding page, has been designed.

This oil heater, it is indicated, is available in several different sizes and types, each type being suited to a special class of service. It is described as being of straight tube, multi-pass design, adaptable to either vertical or horizontal operation. An oil working pressure of 250 lb. and a steam working pressure of 150 lb. are listed for this equipment.

It is a product of The Patterson-Kelley Co., East Stroudsburg, Pa.

Improved Air Conditioner

A heating and air conditioning unit is shown in the accompanying illustration on the preceding page. This is designed for use with a steam boiler.

Air duct distribution, large capacity, dependability, and sturdiness of construction are listed as features of this equipment.

The purpose of this new unit is to heat, humidify, filter and circulate the air. It is understood that provision is made for the installation of cooling coils in order to furnish year around air conditioning. It is stated that this equipment is automatically controlled with thermostatic equipment which is furnished as a regular part of the unit.

The manufacturer is Russel Electric Company, 340 W. Huron St., Chicago.

Joint Compound

A joint compound recently has been placed on the market in collapsible tubes. This is described as being of such a nature that it is not affected by gases or acids and other corrosive liquids.

It is stated that contraction, expansion or vibration do not have harmful effects on joints packed with this product. Also, the manufacturer declares that such joints are not damaged by variations in temperature. It is further pointed out that this material retains its elasticity so that joints to which it is applied may be taken apart easily. It is stated that this compound has been tested up to 3000 lb. per sq. in. and is suitable for use under high pressures.

This is a product of National Boiler Improvement Co., located at 4100 Georgia Ave., Washington, D. C.

Stop Watching the Waterline

A Popular Priced
Feeder and Cut-Out Combination

The No. 855FC combination consists of an improved WATER-BOY safety feeder, a Detroit low water cut-out (listed as standard by the Underwriters' Laboratory) and all fittings to connect to gauge glass openings except 5/8" copper tubing.

LIST PRICE $25.00

ASK YOUR JOBBER!
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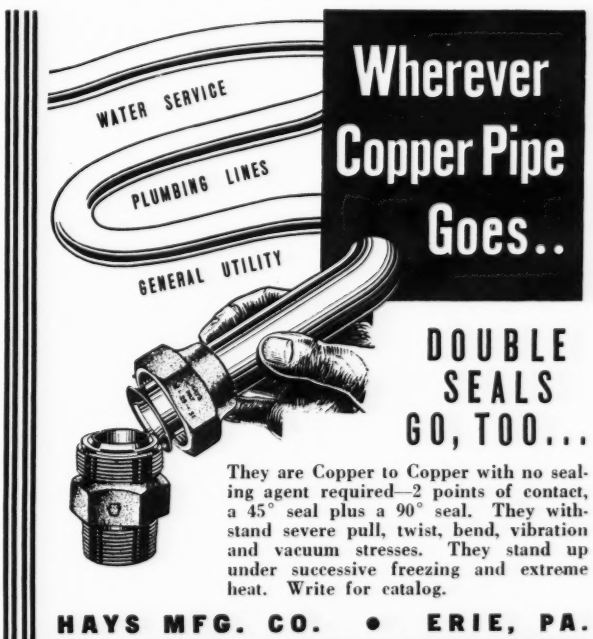
Wm. J. Wooiley, Pres. 43 E. OHIO ST. CHICAGO, ILL.



Wherever Copper Pipe Goes..

DOUBLE SEALS GO, TOO...

They are Copper to Copper with no sealing agent required—2 points of contact, a 45° seal plus a 90° seal. They withstand severe pull, twist, bend, vibration and vacuum stresses. They stand up under successive freezing and extreme heat. Write for catalog.

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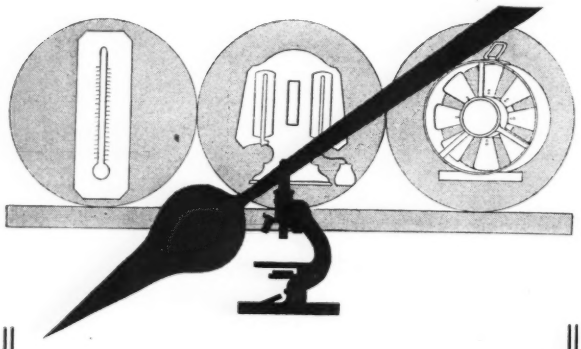

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THE hour is at hand. Opportunity is at the door. Engineers and architects, contractors, distributors and manufacturers are on the threshold of renewed prosperity through the latest and greatest developments in heating, ventilating and air conditioning. The extent to which you and your associates profit, depends upon the care and thought with which you view, study, analyze and compare the exhibits at this Fourth International Heating & Ventilating Exposition,—America's greatest AIR CONDITIONING EXPOSITION.

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THE AIR CONDITIONING EXPOSITION
FOURTH INTERNATIONAL
HEATING & VENTILATING EXPOSITION

5452

New Information and Aids to Sales

A.S.H.V.E. Guide for 1936

The American Society of Heating & Ventilating Engineers, 59 Madison Ave., New York City, announces the fourteenth edition of the "A.S.H.V.E. Guide," which contains new and revised engineering data, increasing the Technical Data Section to 792 pages. Four new chapters have been added, covering the subjects of "Refrigeration," "Drying," "Electric Motors" and "Railway Air Conditioning." One of the features of the "Guide" is the new table of saturated water vapor extending from minus 130 deg. Fahr. to plus 200 deg. Fahr. with heat content values based on the varying values of specific heat for air. A table also has been added giving the maximum city water main temperatures for direct application to cooling apparatus and comfort conditioning. In addition to the new material which has been added, the previous chapters have been revised. Indexes to the Technical Data Section and to Modern Equipment are included in the 1090 pages of this new volume which is bound in a blue and gold flexible cover.

Valve Outlet Sizes Indicated

Gorton Heating Corp., of Cranford, N. J., has made available a small aluminum plate which shows the actual sizes of air outlets of this company's equalizing valves and air eliminators for one and two pipe steam and vapor systems. The plate is approximately one and one-half by three and one-half inches in size, and one side is graduated to make it a three inch rule.

Pamphlet Tells of Stokers

Whiting Corporation, Harvey, Ill., has brought out a rather large booklet of the looseleaf type giving information on its line of stokers. Besides cataloging these stokers, the booklet gives information on such subjects as the burning of coal and contains illustrations showing applications and installations of stokers.

Folder Tells of Sales Policy

Anderson Manufacturing Company, 195 Albany St., Cambridge, Mass., has brought out a folder which describes its policy of cooperation with the regular plumbing and heating wholesaler. The back page of the folder also contains a description and illustration of this company's radiator air valve.

Three Bulletins from Fitzgibbons

Fitzgibbons Boiler Company, Inc., 570 Seventh Ave., New York City, has made available three folders on the subject of boilers. One of these tells of steel heating boilers for oil burners, another describes oil burning steel boilers for domestic heating, while the third covers a coal fired steel boiler for residence heating.

Automatic Boiler Bulletin

An automatically fired boiler is the subject of a folder sent out by Davis Engineering Corporation, of Elizabeth, N. J. This folder consists of four pages, is done in two colors and is punched so that it can be included in a looseleaf binder.

Folder on Trane Equipment

The Trane Company, La Crosse, Wis., recently has issued a bulletin describing radiator valves, traps, strainers and related equipment. The back page of the folder also covers a heating and air conditioning system which this company manufactures. This folder is letter size and is done in two colors.

Folder on Air Valves

The controlled orifice venting valve made by New York Air Valve Corp., 611 Broadway, New York City, is described in the price list issued by this company. The construction and operation of this valve are shown on the two inside pages of the folder, while the back page is given over to listing the types and prices.

New Device for Figuring Profit

What is described as a profit calculator is now available from The Republic Brass Co., Cleveland, Ohio. The purpose of this device is to show at a glance the standard percentage mark-ups over cost between 15 and 100 per cent, on costs than run from 50 cents to $100.

Bulletin by General Electric

General Electric Company, Schenectady, N. Y., is distributing a new folder entitled "Small Transformers for Control and Signal Circuits." This is an eight-page pamphlet, punched for insertion in a looseleaf type of binder, and contains considerable general information regarding transformers.

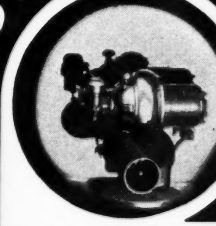
Bulletin on Boilers

Combustion Engineering Company, New York, has just issued a 16-page catalog illustrating and describing details of its sectional-header type boiler as built for a wide range of steam pressures, capacities and different methods of fuel firing. In addition to the details of design, cross-sections of numerous representative installations are included, as well as shop photographs. These illustrations show the fabrication practices followed with these boilers and their inspection.

Catalog Folder on Unit Heaters

A folder has been issued by King Ventilating Company, Industrial Sales Division, 545 W. Washington Blvd., Chicago, which catalogs unit heaters of the suspension type for high and low pressure made by this com-

WELCOME TO BOOTH 243



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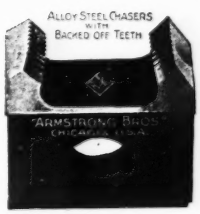
Adjustable Dies and Stocks

Cut faster — Cut smoother threads — Hold their edges



ARMSTRONG BROS. dies cut easier, cut faster, for *chasers have clearance from cutting points*, do not "drag" like ordinary dies. Threads have a lathe-cut smoothness and dies come off pipe without tearing or jamming. These dies hold their sharpness, for they are made of special Vanadium Tool Steel. They fit all standard stocks.

ARMSTRONG BROS. Stocks are accurately machined, inside and out. Chrome Plated Bodies are of Certified Malleable Iron; have no sharp angles or ridges—fit comfortably in the hand. Accurate tool balance gives them handiness. Takes all standard dies.

From the line of "Better Pipe Tools"

ARMSTRONG BROS. Pipe Tools comprise the most complete line made. Each is an improved tool (designed after tests of other types and makes), with many special features. Each bears the distinguishing mark of a "Better Pipe Tool"—the Arm-and-Hammer Trade Mark. Look for this mark; it guarantees complete satisfaction.

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"The Tool Holder People"
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Write for Catalog B-35

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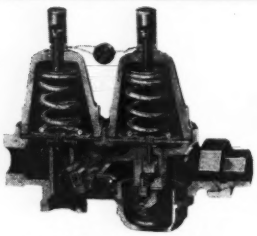
Pressure Controls for Hot Water Heating Systems



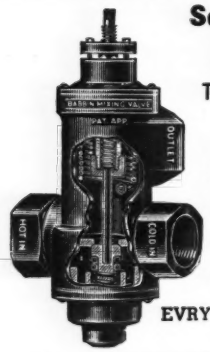
Quality Valves for Automatic Heating & Air Conditioning Equipment

Types CA & CB Full Automatic

Ask your Jobber or request Bulletin D4

A. W. Cash Valve Mfg. Corporation
600 NORTH WATER STREET, DECATUR, ILLINOIS

Solves Hot Water Problems!
BABBIN
THERMOSTATIC MIXING VALVE
Automatically Regulates Hot Water Temperature



Delivers hot water at controlled temperature from submerged water systems. Exclusive outstanding patented features make its use a real economy and its efficiency unequalled.

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Ready in 1—1½ and 2 inch sizes.
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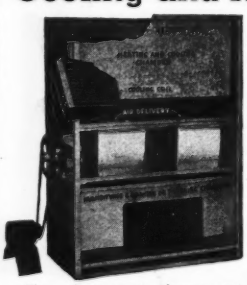
Make 1936 a Record Year with Dailaire Systems of Heating, Cooling and Air Conditioning



The above cut shows unit for steam or hot water.

MR. DEALER—with the popularity of air conditioning and the thousands of homes now heated with hot water and steam, do you realize the great potential sales opportunity in selling the Dailaire conditioning unit, for use with steam and hot water plants.

A big field and good profit awaits the dealer who will grasp this opportunity.

Write now for full details and agency plan.

Dail Steel Products Co.
1350 Main St., Lansing, Mich.

pany. Prices, dimensions, specifications, all are covered in this bulletin, while provision is made on the last page for the printing of the dealer's name.

Folder on Controllers

A folder just issued by The Brown Instrument Company, of Philadelphia, Pa., illustrates and briefly describes the features of the air operated controllers recently introduced by this company. The folder is in brown, black and white and opens out to the size of a newspaper page, showing the construction and listing the salient features of this equipment.

Expansion Joint Folder

A 16 page folder has just been issued by Yarnall-Waring Company, located at Chestnut Hill, Philadelphia, Pa., for the purpose of giving complete catalog data on expansion joints of this company's manufacture. Besides illustrating these joints and their applications, the pamphlet contains information on how to figure expansion in pipe lines.

Ventilating Equipment

A data and price sheet is available from Autovent Fan & Blower Company, 1805 N. Kostner Ave., Chicago, which covers fans and other ventilating equipment made by this company. Information on how to figure ventilation correctly also is included.

Folder on Electrical Devices

A new catalog consisting of 28 pages and cover has just been issued by Struthers Dunn, Inc., 139 N. Juniper St., Philadelphia, Pa., featuring relays, timing devices, thermostats, pots and ladles, resistors, thermal links, insulators, and like equipment.

Folder Describes Air Conditioner

A folder is available which describes the self-contained summer air conditioning unit of Servel Sales, Inc., Evansville, Ind. The folder discusses the various applications and includes sales points and construction features.

Heating Unit Folder

Delco Appliance Corporation, Rochester, N. Y., recently has brought out a folder on a heating unit which is described as a combination oil burner, boiler and hot water heater. The construction and sales features of this equipment are covered in the folder.

Folder Describes Heating Unit

What is described as a warm air heater air conditioning unit is featured in a folder issued by International Heater Company, of Utica, N. Y. The salient points of this equipment are listed in the pamphlet, and catalog data are tabulated on the last page.

Taxes—

(Continued from Page 67)

Income taxes are levied on net income and not upon gross receipts or earnings. In order, therefore, to compute taxes, it is necessary to show the gross income first. Then from gross income are deducted certain allowable expenses, bad debts, losses, etc., and the remainder is called the net income. After the net income is arrived at, there are certain exemptions which are in the nature of allowances or reductions of the amounts subject to taxation, and credits which generally represent income not subject to the normal tax. To put the matter in clearer form, we may summarize as follows:

1. Gross income less deductions equals net income.
2. Net income less credits and exemptions equals taxable income (for normal tax).
3. Net income equals taxable income.

TWO KINDS OF TAXES

Individuals are subjected to two kinds of taxation on their net income. The first is known as the normal tax, and the second as the surtax.

The following chart gives normal and surtax rates:

FEDERAL INCOME TAX CHART

1. Net Income	Surtax 2. Total Surtax	Surtax 3. Surtax Rate on Excess	Total Normal and Surtax 4. Total Tax	Total Normal and Surtax 5. Total Rate on Excess
$ 0	....	..	....	4%
4,000	None	4%	$ 160	8
6,000	$ 80	5	320	9
8,000	180	6	500	10
10,000	300	7	700	11
12,000	440	8	920	12
14,000	600	9	1,160	13
16,000	780	11	1,420	15
18,000	1,000	13	1,720	17
20,000	1,260	15	2,060	19
22,000	1,560	17	2,440	21
26,000	2,240	19	3,280	23
32,000	3,380	21	4,660	25

FAMILY LOSSES

A new provision is contained in the Revenue Act of 1934 which will not permit losses to be taken in cases of sales or exchanges of property, directly or indirectly, between members of a family or (except in the case of distribution in liquidation) between an individual and a corporation in which such individual owns, directly or indirectly, more than 50 per cent in value of the outstanding stock. (section 24 (a) (6))

The family of an individual includes only brothers and sisters (whether by the whole or half blood), spouse, ancestors and lineal descendents. For the purpose of determining whether an individual owns more than 50 per cent in value of the outstanding stock of a corporation, the individual is considered as owning the stock owned directly or indirectly by his family as that term has just been defined.

PERSONAL EXEMPTIONS

	Per Year	Per Month
Single person	$1,000	$ 83.333
Head of a family	2,500	208.333
Husband and Wife living together	2,500	208.333
Dependents (each)	400	33.333

If status of person or dependent changes during the year the personal exemption or credit must be apportioned by months, more than half a month counting as a full month. The personal exemption of a husband and wife living together may be taken by either or divided between them. Each person (other than husband and wife) dependent upon and receiving his chief support from the taxpayer, if such dependent person is under 18 years of age or is incapable of self-support because mentally or physically defective is a dependent. (Sec. 25.)

HOW TO USE THE FEDERAL INCOME TAX CHART

The computation of income taxes under the Revenue Acts of 1934 and 1935 is simplified by reason of two changes in the law: (a) the reduction of the normal tax to a straight 4 per cent, and (b) the allowance of the personal exemption and credit for dependents for purposes of both the normal tax and surtax.

The normal tax is not shown on the chart because it is readily computed by taking 4 per cent of net income subject to normal tax. The table of surtax rates (columns 2 and 3 on the chart) is all that is needed for the computation of income, taxes under the Revenue Acts of 1934 and 1935 (see first method below). For the convenience of taxpayers, however, a table of the total amount of normal and surtaxes has been included in the chart (columns 4 and 5) from which the total tax may quickly be estimated (see second method below).

The Revenue Act of 1935 increased the rates of tax

FEDERAL TAX CALENDAR

1936

Feb. 1.	Last day for a citizen or resident to file claim for exemption from withholding of tax on tax free covenant bonds.
Feb. 1.	Last day for a corporation to file report, covering distributions, partly or wholly non-taxable, to shareholders.
Feb. 15.	Last day to file all information returns (excepting corporation reports of distributions to shareholders, partly or wholly non-taxable).
Feb. 16.	Last day to file individual, corporation, fiduciary and partnership income tax returns and corporation excess profits and surtax returns (except returns of non-resident aliens, foreign partnerships, foreign corporations, etc., see June 15). Entire tax due or, at option of taxpayer, one-quarter tax, and balance of tax in three equal installments at intervals of three months. Last day to file annual report of taxes withheld at source. Last day to file gift tax returns. Payment of entire gift tax due. Last day to file information returns by donees of gifts.
May 1.	Last day to file non-resident alien exemption certificate with withholding agent.
June 15.	Last day to file income tax returns of non-resident aliens and foreign corporations not maintaining office or place of business in United States. Entire tax due or, at option of taxpayer, one-quarter of tax, and balance of tax in three equal installments of intervals of three months. By general extension last day to file income tax returns of foreign partnerships, foreign corporations maintaining office or place of business in United States, domestic corporations transacting business and keeping records abroad, domestic corporations whose principal income is from possessions of the United States, and citizens residing or traveling abroad. First and second installments of tax due with interest at 6 percent per annum on first installment from March 15 until paid. Taxes withheld at source due. Second quarterly income tax installment due.
July 31.	Last day to file capital stock returns. Payment of entire capital stock tax due.
Sept. 15.	Third quarterly income tax installment due.
Dec. 15.	Fourth or last quarterly income tax installment due.

but only with respect to surtax net incomes in excess of $50,000 in taxable years beginning after December 31, 1935. In using the chart to compute the tax upon surtax net incomes in excess of $50,000 select the rates applicable to the taxable year for which the computation is being made.

The Federal Income Tax chart may be used to compute income taxes under the Revenue Acts of 1934 and 1935 in one of two ways as follows:

First Method:

1. Add all of the items of taxable gross income including dividends, interest-exempt from normal tax, and capital gain.
2. From taxable gross income subtract all allowable deductions, and capital loss to the extent recognized. Subtract also the personal exemption and credit for dependents. The amount remaining is "surtax net income."
3. Compute the surtax upon "surtax net income" by reference to columns 2 and 3 of the chart on the preceding page. (There is no surtax on surtax net income of $4,000 or less.)
4. Determine the amount subject to normal tax by deducting from "surtax net income" (a) the amount of dividends and interest exempt from normal tax (previously included in gross income) and (b) 10 per cent of earned net income, but not in excess of 10 per cent net income.
5. The normal tax will be 4 per cent of the amount remaining.
6. The total tax will be the total of the surtax and normal tax so found.
7. From the total tax deduct allowable credits such as taxes withheld at source, taxes of foreign countries and possessions of the United States, and miscellaneous credits, if any. The sum remaining will be the Net Total Federal Income Tax.

Second Method:

Taxpayers, the greater part or all of whose income is subject to both normal and surtax may compute their income taxes by reference to columns 4 and 5, as follows:

(a) Determine "surtax net income" in the manner outlined above (paragraphs 1 and 2).

(b) Compute the gross tax upon "surtax net income" by reference to columns 4 and 5 of the chart of the preceding page.

(c) From the gross tax deduct 4 per cent of (a) dividends and (b) earned income credit. Deduct also the credits described in Paragraph 7 above. The sum remaining will be the Net Total Federal Income Tax.

Corporations—State Taxes—When a company transacts business from another State, the question whether the company is transacting business within the State, so as to be liable to State impositions and penalties for non-qualification becomes a very important and serious one, in respect to which the corporation should be very sure of its position. Especially must a constant and insistent watch be kept over property taxes of the various States as these represent some of the most common and perplexing forms of taxation.

Corporations—Federal Taxes—The United States Revenue Act of 1935 has amended the Revenue Act of 1934, *applicable only in the case of taxable years beginning after December* 31, 1935, *in the following respects:*

1. Provisions that no gain or loss shall be recognized upon the receipt by a corporation of property (other than money) distributed in complete liquidation of another corporation, if the corporation receiving such property on such exchange was on August 30, 1935, and has continued to be at all times until the exchange, in control of such other corporations.

2. Permits corporations to deduct, to an amount which does not exceed 5 per cent of net income computed without the benefit of this deduction, contributions or gifts made within the taxable year to or for the use of

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SAY THOUSANDS OF USERS
K V
TWO generations of valve users have known Kennedy Valves to be skillfully designed and honestly made. That is why so many thousands of engineers and contractors will use only valves with the KV trade mark — the shield that assures satisfactory service. Profit by the experience of these men and standardize on Kennedy Gate, Globe, Angle and Check Valves for steam, water, air, gas or oil service.
Fig. 89
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VALVES-PIPE FITTINGS-FIRE HYDRANTS
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GOOD THREADS are worthy of a good joint filler
SMOOTH-ON NO.3
THREADED or flanged joints made with Smooth-On No. 3 can be taken apart at will, but in service must stay tight. The metal filling once spread perfectly over the thread surfaces and set, cannot dry, shrivel or blow out under vibration, high pressure and wide temperature range, because it then acts in unison with the pipe metal itself—and has the same expansion coefficient.
If you want perfect joint performance, read the Smooth-On Handbook, and give Smooth-On No. 3 a trial.
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SMOOTH-ON
No.3
Get Smooth-On No. 3 in 1 or 5-lb. can or 25-lb. keg from your supply house or if necessary, direct from us.
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HELPFUL IDEAS for ENGINEERS
SMOOTH-ON MFG. CO., DEPT. 12
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Do it with SMOOTH-ON

certain domestic corporations and, for use with the United States only, to certain domestic trusts, community chests, funds and foundations, organized and operated exclusively for religious, charitable, scientific, literary or educational purposes, or for the prevention of cruelty to children.

3. Limits the deduction for dividends received from domestic corporations subject to income tax of 90 per cent of the amount received. In other words, 10 per cent of such dividends are subject to tax.

RATES APPLICABLE TO TAXABLE YEARS BEGINNING AFTER DECEMBER 31, 1935

Income Tax:

Net Income	Total Tax	Rate on Excess
$ 0	.....	12½%
2,000	$ 250	13
15,000	1,940	14
40,000	5,440	15

Surtax on personal holding corporations:

Undistributed Adjusted Net Income	Total Tax	Rate on Excess
$ 0	....	20%
2,000	400	30
100,000	29,800	40
500,000	189,800	50
1,000,000	439,800	60

The Revenue Act of 1935 imposes upon every domestic corporation with respect to carrying on or doing business during any part of each year ending June 30 (beginning with the year ending June 30, 1936) an excise tax of $1.40 for each $1,000 of the "adjusted declared value" of its capital stock.

A new declaration of the value of capital stock may be made by corporations in their first return under the Revenue Act of 1935.

For the first year for which a tax is imposed, the "adjusted declared value" is the value as declared by the corporation in the first return as of the close of its last income-tax taxable year ending at or prior to June 30, or as of the date of organization in the case of a corporation having no income-tax taxable year. For any subsequent year the "adjusted declared value" is the original declared value as adjusted in the manner prescribed in the statute.

PARTNERSHIP RETURNS

Partnership Returns—The Income Tax Law requires the partnership income to be distributed to the members of the partnership. It is necessary that each member's portion be subdivided into the classes of income taxable at different rates on his individual return.

The partnership return must therefore show in the distribution section the following:

1. Name and address of each partner. This is for the purpose of tracing the income to the partners' individual returns.

2. Interest of each in the partnership. This refers to the proportionate interest in the income rather than in the assets: in other words it refers to the profit-sharing ratio rather than the capital ratio.

3. The division of capital net gain, if any, meaning the gain derived from the sale of capital assets held for investment. Capital net losses also should be reported.

Proved Performance on Water Heater Tanks

Accuracy and Dependability —these are the vital themes in the production of "Patrols." Thirty years' experience is embodied in their design and construction.

For Installation On Domestic Water Heaters and Range Boilers as Dependable Protective Water Relief Devices, Six Types of "Patrol" Temperature and Pressure Relief Valves Offer Real Extra-Profit Opportunities.

Write for Catalog and Technical Information—Form 1235.

"Patrol" Type "DTP" Temperature and Pressure Relief Valve. Listed by Underwriters' Laboratories and American Gas Association. Complete Details On Request.

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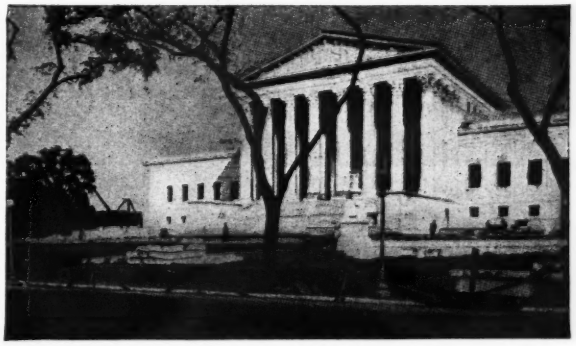

To insure a continuous supply of clean hot water for the U. S. Supreme Court Building two 350 gallon copper boilers by Dahlquist were chosen. Honest copper fabricated by the methods Dahlquist has developed through years of highly specialized experience, produces hot water boilers that are enduring and trouble free.

The only two real improvements made in copper boiler design in the past four decades were Dahlquist engineered. These patented units have effected fuel savings of fifty percent. Dahlquist boilers are available in all sizes, from home hot water storage systems to 10,000 gallon industrial tanks. Write us regarding your requirements.

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A fast working powdered boiler repair that will work when all others have failed.

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A practical repair at a reasonable price. The formula of a heating engineer who has used boiler dope for thirty-five years.

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THE EAGLE-PICHER LEAD COMPANY
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4. The division of income from dividends on stock of domestic corporations or of foreign corporations which derive 50 per cent or more of their income from sources within the United States.

5. The distributive shares of other income consisting principally of business operating profits.

6. The amount of income and profit taxes, if any, paid to a foreign country or to a possession of the United States.

A partner's share of each of the above mentioned items is merged with similar personal items, if any, and reported on his personal return, in the proper columns. Each partner is subject to tax upon his entire distributive share of the partnership net income even though he may not have actually received it from the partnership.

Progress—

(Continued from Page 58)

Health Service appears nowhere in the order. The Public Health Service is in the status of a cooperating sponsor. In a letter dated September 26, 1935, Miss Josephine Roche, assistant secretary of the treasury in charge of public health, wrote a letter to Harry Hopkins of the WPA promising cooperation on the surveys. This letter is the basis of the cooperative sponsorship between the WPA and the Public Health Service.

At this meeting, at which the N.A.M.P. was represented, it developed that certain "paper work" must be done to launch the project successfully. First of all, the Public Health Service is to prepare a statement outlining the respective responsibilities for the conduct of the surveys. Briefly enumerated, these responsibilities are as follows:

1. The Public Health Service will nominate a supervisor for the New York and Detroit projects. These nominations will be approved by the State WPA authorities in the respective states.

2. The project supervisor, after his appointment is approved, will engage a group of technical assistants, probably persons with college degrees in sanitary engineering and will immediately organize a training class which will last about one month.

3. After this subsidiary supervisory staff is trained, the WPA will furnish the necessary unemployed, with proper technical qualifications and backgrounds, to actually conduct the surveys.

4. It is proposed to establish the principal laboratory and drafting department in New York City, as it was felt that a duplication of such facilities in Detroit would be wasteful of public funds.

5. In addition to the supervisor and his trained staff, the project will receive the additional impetus of direct contact with the Public Health Service in Washington and with such of its representatives as they may see fit to transfer to New York and Detroit.

After the statement of the respective responsibilities is prepared, a form known as No. 330 will be filled out by the Public Health Service and approved by the respective state WPA authorities. On such approval, funds will be allocated and the project will immediately start along the lines outlined above.

At the Dec. 18 meeting, it was the consensus of opinion that within a week the necessary paper work could

be done and approval secured, so as to have the work under way the last week of December.

The name of the man selected by the Public Health Service to conduct this survey leaves nothing to be desired as to his ability and experience. Unfortunately, his name cannot be announced at this time, in view of the fact that, as set forth above, he must receive the formal approval of the WPA.

As the work progresses in New York and Detroit, and as tested methods are developed the Public Health Service will prepare a manual of procedure to enable the New York and Detroit efforts to be reproduced in any section of the country by qualified individuals or groups. This opens up a tremendous possibility for the carrying on of a second WPA project embracing public buildings in the other sections of the country, the work of which will be performed by local groups under the direction of competent individuals with men furnished by the WPA.

Briefly summarized, the situation is now favorable for an early start. Certain difficulties should not be overlooked in any objective consideration of these surveys. First, it is going to be difficult to secure permission from the various departments of the government to have the plumbing inspected in the premises under their control. We are informed that two important departments of the government have already refused access to their premises on the ground that operations performed in certain of the structures are of a character which would not permit inspection by the type of men who are now on the unemployed rolls. A definite effort is now under way to secure an Executive Order from President Roosevelt throwing the doors of all government buildings in the two before mentioned cities open to the inspection. Enough promises have already been granted to permit the project to start.

250 Loans—

(Continued from Page 57)

Missionary	1	Chemist	1
Bookkeeper	4	Veterinarian	1
Jeweler	1	Candy Maker	1
Credit Manager	1		
	250		

The range of the amount of yearly income of the borrowers was from under $1,500 to over $7,000. The table follows:

Annual Income of Borrowers	Number of Borrowers
Under $1,500	17
$1,501 to $2,000	37
2,001 to 2,500	40
2,501 to 3,000	26
3,001 to 4,000	40
4,001 to 5,000	23
5,001 to 6,000	9
6,001 to 7,000	7
Over $7,000	27
	226

(The total does not agree with the number of loans because 24 have made more than one loan.)

The average income of the borrowers was $4,166.40 each per year.

There was a wide range of purposes for which the proceeds of the loans were used. Painting and decorat-

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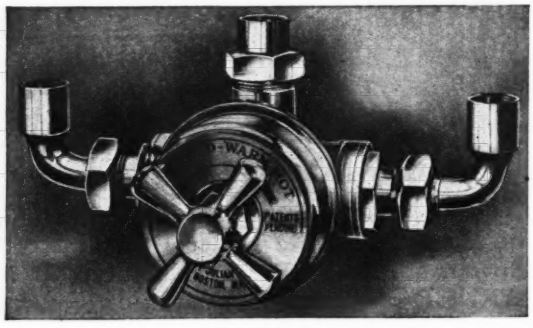

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HINDLEY MFG. CO.
VALLEY FALLS, R. I.

HINDLEY'S PLUMBERS' SPECIALTIES

ing lead with a percentage of 46, while plumbing and heating was next with better than 25 per cent. Nearly 13 per cent of the loans were made for additions. A breakdown of the purposes follows:

Repair of sidewalks	6	Painting	63
Additions	29	Decorating	53
Remodeling interior	25	Repair garage	6
Remodel bedroom	5	Landscaping	3
Remodel bathroom	21	Heating	32
Enclose porch	9	Storm windows	4
Remodel kitchen	6	Brick veneer	2
Garage	11	Roofing	22
Plumbing	31	Partitions	2
Plastering	20	Finish house	3
Carpentry	42	Refrigeration	3
Electrical	9	Repair exterior	21
Foundation	5	New porch	15
Oil burner installation	5	Sewerage	3
Insulation	5	New floors	7
Linoleum	1	Re-stucco	2
Gas stove	1	Repair chimney and fire place	3
Asbestos siding	3	Build cottage	4
Winter air conditioning	1		

(Total exceeds number of loans as some loans cover more than one type of work.)

The sources of the loans were of interest. Customers accounted for 80. Material companies and contractors sent 31 to the bank, the Better Housing Committees 23, other sources 111, and from branch bank 5.

Tables covering the amounts borrowed, and the length of the term the notes ran follow:

Amount of Note	Number of Loans
Under $200	38
$201 to $300	39
301 to 400	36
401 to 500	23
501 to 600	27
601 to 700	12
701 to 1,000	24
1,001 to 1,200	17
1,201 to 2,000	17
Over $2,000	17
	250

Term of Notes	Number of Loans
12 months	50
18 months	24
24 months	53
36 months	94
Miscellaneous	29
	250

Average: 26 months.

The collection experience of the bank on 100 modernization credit loans was most satisfactory, and was based on a total of 885 payments.

222	Payments made on due date	25 per cent
137	Payments made one day ahead of due date	15 per cent
246	Payments made two days to one week ahead of due date	28 per cent
57	Payments made more than one week ahead of due date	7 per cent
662	Total payments made on or before due date	75 per cent

Following is a tabulation of late payments. Many of these are due to delay in the mails and postponement of recording because of holidays, Saturdays and Sundays:

132	Payments made one day late	15 per cent
86	Payments made two days to one week late	9.5 per cent
5	Payments made more than one week late	.5 per cent
223	Total payments late	25 per cent

One Year Later—

(Continued from Page 57)

possibilities awaiting them in the modernization field and have brought about a realization of the potential business that this industry can enjoy through offering prospective purchasers a financing plan that enables them to pay out of income.

That this opportunity was recognized has been demonstrated in the fact that in the last sixteen months or so a greater number of heating and plumbing contractors have financed more transactions than in any other like period in the history of the industry. Approximately 25 per cent of the total volume financed under the FHA at the beginning of these activities represented heating and plumbing. We find in recent months that other divisions of the building industry, observing what we in our particular field have accomplished, stepped up their activities and consequently brought about a decrease in the percentage of heating and plumbing financed as compared to total financing under FHA. However, the dollar volume of heating and plumbing financing under FHA has shown a steady increase.

HEATING AND PLUMBING INDUSTRY TOOK LEAD

The FHA originated with the highest motives of rendering a distinct service, that of helping the country back to normalcy through a stimulus to the lagging heavy industries. Part of its activities were along paths which, although they had been pioneered by a few in the building industry, had never been followed generally by the industry as a whole nor participated in by the financial community. At the inception of FHA activities the heating and plumbing industry was enabled to take the lead in fostering the plan submitted by the Administration which emanated through the National Housing Act.

Now, after one year and five months, we find the FHA an outstanding success. The industry, the banks and the general public are practically unanimous in sounding its praises; in lending cooperation; in recognizing its soundness and in acknowledging its accomplishments, and they are keenly aware of the unmistakable and undeniable necessity of continuing the activities of the FHA until such time as new building volume has increased to the point of at least employing all the employables in the building industry.

BUILDING MUST BE STIMULATED

The country apparently has turned the corner at last but, to keep it going forward, the activities of the heavy industries, particularly the building industry, must be encouraged, stimulated and supported by such agencies as this until normal times are definitely and permanently assured. It would be nothing but a catastrophe to end the activities of the FHA short of this. All divisions of the building industry, the contractors, wholesalers, manufacturers, not to mention the financial institutions which are cooperating so splendidly and the property owners being benefited, should join in publicly and acknowledge the accomplishments of this governmental agency, in emphasizing that its mission is only partially completed, in urging the necessity of its continuation and in lending

Prescribed for Low Pressures

Quick recovery is assured for sick heating systems that fail to deliver heat where and when wanted. Cover boiler and pipes with Careycel to stop the heat loss, then watch fuel bills go down and heat delivery go up.

30% Less Heat Loss

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Dependable Products Since 1873

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Made for Long Rugged Service

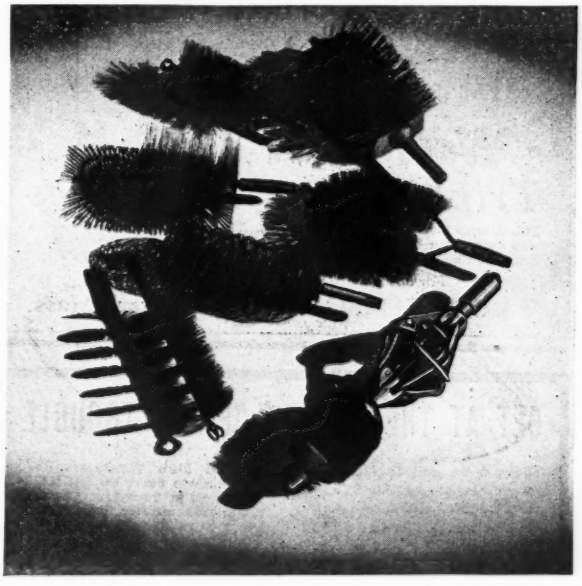

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FIG. 550

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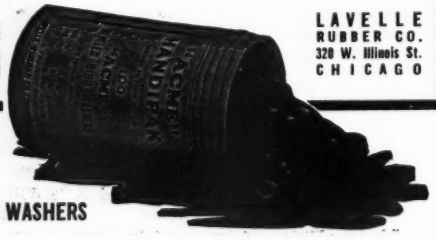

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BEVELED BIBB WASHERS

support to obtain its extension. The FHA has been the balancing scale this year between good business and bad business. It has changed despair into encouragement. Let us work to bring about its continuation.

A. C. Controls—

(Continued from Page 82)

as described for the summer system with recirculation but without bypassing. The air washer temperature is controlled by a thermostat in the washer outlet the same as described for a summer system without recirculation and bypassing.

A combination summer and winter system must partake of all of the apparatus found in either a summer or winter system taken separately, except in cases where the equipment is of such nature as to serve both cases. One arrangement of a combination system is shown in Fig. 10 where a preheater, washer, reheater and fan are utilized. Here the intake and discharge dampers are 25 per cent and 75 per cent for the intake, with the discharge damper 75 per cent and the cross connection damper 75 per cent.

The washer may be used for dehumidifying in summer and humidifying in winter. A preheater usually must be used for winter; a reheater is necessary in winter and in summer as well if no bypass is used. The inlet and discharge dampers are controlled from a thermostat set at the washer outlet, which also operates the cross connection damper in opposition. The refrigeration is shut down by the thermostat in the outside air intake, in the manner already described for summer systems.

At the outlet of the washer two thermostats are used: one for summer to control the temperature of the cooling water, and the other for winter to open the dampers wide on both intake and discharge, and to close the cross connection damper whenever the outside temperature goes below 60 deg. Fahr. A continued fall in the outside temperature to a point where the washer outlet temperature gets too low will cause the washer delivery air to fall and will result in the same thermostat again closing the large dampers and opening the cross connection, so that recirculation is again established as soon as the outside temperature is too low to use 100 per cent without recirculation. The reheater is controlled from the room or recirculation duct temperature in the manner previously explained with a 60 deg. Fahr. protection thermostat in the fan discharge.

SYSTEM WITH RECIRCULATION AND BYPASS

This is quite similar to the scheme used where no bypassing is done, as will be seen by referring to Fig. 11. The equipment is changed only to the extent of substituting the cross connection from the recirculation duct so that part of the air will enter after the washer and the dampers are arranged so as to be controlled from the room or from the temperature in the recirculation duct being set in opposition on the two cross connections as explained under "summer system—with recirculation and bypassing." No reheater is needed

for the summer but one usually is required for winter use when it may be desired to put air in at 80 deg. Fahr. or so. This reheater may be controlled from the room or from a thermostat in the recirculation duct set to turn on the heater whenever the return or room air is below 68 deg. Fahr.

The automatic control system used for theater work of course is employed for both winter and summer use and a typical control of this nature is illustrated in Fig. 12 where: (1) is a small outside damper to control the admission of the ordinary amount of fresh air—usually 25 per cent—and is operated by hand; (2) is the large outside damper used when 100 per cent outside air is desired; (3) is the return circulation damper; (4) is the damper controlling the recirculation air bypassing the washer; (5) is a thermostatic valve controlling the admission of steam to the tempering heater; (6) is another thermostatic valve controlling the admission of steam to the reheater; (7) is a dew point thermostat usually set for 50 deg. Fahr.; (8) is the thermostat controlling the thermostatic valve (5); (9) is a thermostat set for 74 deg. Fahr.; (10) is a reverse action thermostat set for 55 deg. Fahr.; (11) is the fan; (12) is the tempering heater; (13) reheater; (14) bypass damper; (15) refrigerating machine; (16) cooler; (17) condenser; (18) circulation pump; and (19) air washer.

DESCRIPTION OF WINTER OPERATION

In the winter operation, valve (5) is closed by thermostat (8) in the air intake when outside temperature exceeds 35 deg. Fahr.; damper (1) is always open when the apparatus is in operation; the thermostat (9) controls valve (6) so as to keep the building warm and opens damper (2) and closes damper (4) as inside temperature rises; the dew point thermostat (7) opens the return air damper (3) when necessary to prevent the dew point going below 38 deg. Fahr.

Season	Outside Dry Bulb Deg. Fahr.	Inside Dry Bulb at (9) Deg. Fahr.	Inside Wet Bulb Deg. Fahr.	Inside Humidity Per Cent	Dew Point at (7) & (8) Deg. Fahr.
Winter					
	30 or less	70-72	15 to 16	35-40	38 min. to 50 max.
	40	72	below	35-40	38 min. to 50 max.
	50	72	dry bulb	35-40	38 min. to 50 max.
	60	72	" "	40-50	38 min. to 50 max.
	70	72	" "	40-50	38 min. to 50 max.
Summer					
	75	73	10 to 12	55-60	50 to 55
	80	74-75	below	55-60	50 to 55
	85	76	dry bulb	55-60	50 to 55
	90	77	" "	55-60	50 to 55
	95	78	" "	55-60	50 to 55
	100	79-80		55-60	50 to 55

In summer operation damper (1) is always open, dampers (2) and (4) are controlled from thermostat (9) when return is over 74 deg. Fahr. or 75 deg. Fahr. (2) opening and (4) closing at that temperature. The dew point thermostat (7) is maintained by the cooled water at 50 deg. Fahr.; as the load rises this temperature gradually is raised until it reaches 55 deg. Fahr. when the thermostat (10) (reverse acting) closes damper (2) and opens damper (3).

In the spring and fall the operation is the same as in the winter except when steam and refrigeration are not required. Then thermostat (9) opens damper (2)

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There's a warm friendly atmosphere that makes you feel at home the minute you enter its doors. Hotel Melbourne is close to all points of interest in St. Louis. Wonderful food at moderate prices.
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400 ROOMS
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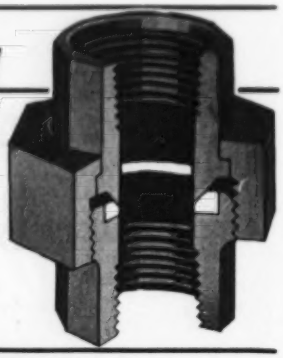

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and closes damper (4); the damper in the outboard exhaust (not shown)—if any—also should open at this time to relieve building pressure.

The conditions maintained are shown in the table on the preceding page.

Old Joe—

(Continued from Page 61)

that he wanted to have and one of these things was a modern bathroom with all the mirrors and fixtures and colorful installations that one would put in a twenty-five or thirty-thousand dollar home.

"Anyway, Old Joe took a walk down to Sixty-third and Halsted every day; liked to look around I guess, and sometimes he'd get pretty tired walking back home and about 4:30 he would drop in here and we'd talk about installing his new bathroom.

"Sometimes he'd bring in a magazine ad with a picture of a beautiful installation that had taken his eye.

" 'Mr. Ferguson,' he'd say, 'how much would this cost? Now there's a right smart bathroom and I'd like to get me one like that—when I go back to work.'

"So we would sit down and figure on it and lay plans just as if that bathroom was going to be built next week.

" 'That's a powerful lot of money, ain't it,' he'd say when I got through. 'But of course,' he would add, 'when I get back to work, Marm and me 'll be able to afford it.'

"He and Marm, that's what he called his wife—'though they never had any children, owned the dilapidated out-of-date three-flat where they lived. The rent from the apartments was probably their only source of income, and, I suppose, the meagre living and dingy quarters provided by this building contrasted strangely with the conversation of the men of finance who daily had passed before Old Joe in his barbering shop on La Salle Street.

"Perhaps it was from these men, big in the affairs of life, that he derived his longing for something with which to break the monotony of gloom and murkiness that surrounded him. Just one small room that spelled CLASS; the class he had striven for and failed to get.

"It was on rainy days, when I asked him to wait for me so that I could drive him home, that he dropped those hints about his business, that had been, and the stocks that broke, and the bonds that busted,—and with them

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The register of Hotel President reads like a roll call of the Nation's great. Those who can command the very best anywhere, invariably select this world famous hostelry. You too, can enjoy this comfort and luxury at low cost.

450 Rooms With Bath from $2.00

HOTEL PRESIDENT
PERCY TYRRELL
Managing Director

BALTIMORE AT 14TH STREET
JUST OUT OF THE NOISE ZONE

had gone the dream of a time when comfort and plenty would ease the sunset years. And all that seemed to be left to hope for—was this bright new bathroom.

"Of course, on those rainy days, when I drove him home, I met Marm, and on two or three occasions I was called to replace a section of pipe or fix a faucet that had worn out, but nothing very big came of it.

"Old Joe and his bathroom became the standard quip around here when anything improbable was brought up.

"But one day about a month ago, I was sitting here thinking it was about time to go home for dinner and wondering if Joe would come in in time for me to take him home, when the telephone rang.

"It was Marm. She wanted to know if I would come over and submit a figure on a new bathroom.

"Well, I knew it would take some time, and besides I would have to talk an hour or so with Old Joe, so I told her I would come over about seven-thirty, right after dinner. I was wondering if Old Joe had finally gone back to work, or what they'd fallen heir to.

"When I got there, Marm took me right back to the old bathroom, and we did some real figuring.

"Marm, it seems, had been down to the stores and had priced about everything needed. She knew the cost of each item, so she asked for an itemized account with labor and other charges in separate groups.

"Well, I gave it to her, and after she had looked it over for quite a while, she said:

"'Your bathroom fixtures are a little high, Mr. Ferguson, but not so much—and I know you'll do a good job for Joe. You go ahead.'

"Why, yes I will," said I, "but I thought I'd spend some time with him. Where is Old Joe?"

"'Then you haven't heard?' asked Marm. 'Why Old Joe died last week and his last request was that you put in his new bathroom for him.

"'We're paying for it out of his insurance money,' added Marm."

Starbuck—

(Continued from Page 71)

the stack, all four may be stack-vented; the bath on the first floor is wet-vented through the lavatory connection, which also acts as a vent for the adjacent water closet.

E-Z RADIATOR HANGERS

3 Styles
All Radiators

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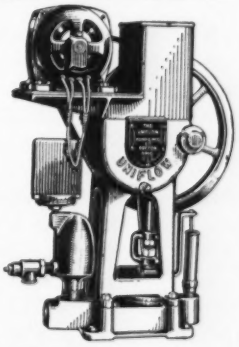

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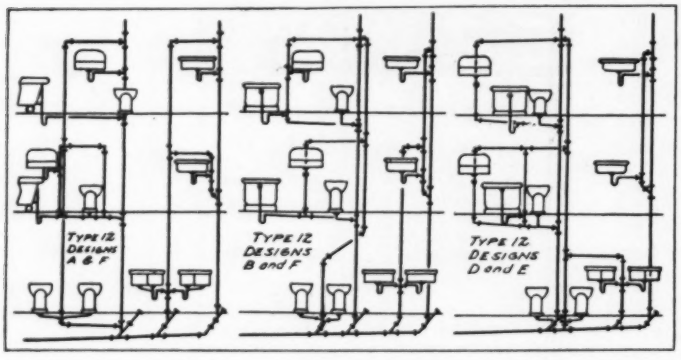

Fig. 19. (Types A and F); Fig. 20. (Types B and F); Fig. 21. (Types D and E); Typical elevations of plumbing systems for two-story, two-family houses having two stacks

In this particular instance, the water closet may be said to be vented not only by that connection, but also by the main vent stack, into the foot of which it connects. The last of the eight fixtures, the lower combination fixture, is excellently vented by its connection into the main vent stack. Such a connection is correct as long as there is no vent connection into the vent stack at points below. Figs. 13, 14 and 15 show the same type house as the three previous elevations, the difference being that the one set of elevations show no fixtures in the basement, while the others do show them.

Here there are twelve fixtures in each of the elevations, and in Figs. 13 and 14 only four out of the twelve require individual vents.

The two-story, two-family house which uses two stacks and has no basement fixtures is shown in Figs. 16, 17 and 18, and the same thing with additional fixtures in the basement are shown in Figs. 19, 20 and 21.

It seems to us that if the twenty-one layouts which we show for plumbing systems for two-story, one-family and two-family houses have any one lesson to offer the student of plumbing, it is that when intelligent planning is done, venting often can be simplified to a remarkable extent. This is one of the chief points that the Hoover report has emphasized, and a worthy point it is. There is never a good excuse for unduly complicating any mechanical installation — always the simplest arrangement is best, all other considerations being equal.

Quite an advance step would be taken if plumbing codes were to bear down on simplified venting. We recall a considerable number of such codes that lay down the law that each plumbing fixture shall be individually vented. Not all such codes are enforced in this respect however. Nevertheless, there are a few codes that insist on individual venting, even for the top floor water closet when located close to the stack. When such an extreme position is taken in a plumbing code, to us it means only one thing, and that is that through the code provisions, unjust increase of volume in plumbing contracts is being attempted.

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Index to Advertisers

January, 1936

Adams Engineering Company, Inc. 21
American Blower Corporation 18
American Brass Co..... 17
American Gas Products Corporation 39
American Radiator Company.....43 and 102
American Sanitary Mfg. Co.111
American Society of Heating & Ventilating Engineers 26
Anderson Mfg. Co..... 13
Armstrong Bros. Tool Co..155
Ayling & Reichert Co.....164

Barber Gas Burner Co., The.156
Bell & Gossett Co..... 15
Briggs Manufacturing Co. .....29, 30, 31 and 32
Burnham Boiler Corp..... 20
Burnley Battery & Mfg. Co.167

Carey Co., The Philip.....163
Case & Son Mfg. Co., W. A.131
Cash Valve Mfg. Corp., A. W. 156
Central Brass Mfg. Co.....164
Century Electric Co.....147
Chicago Faucet Co..... 6
Citrushine Mfg. Co.....160
Consolidated Brass Co.....148
Crane Co. .....14, 98 and 99

Dahlquist Mfg. Co.....159
Dail Steel Products Co.....156
Dart Mfg. Co., E. M.....167
Decatur Pump Co.....161
D'Este Sales Corporation, Julian 162
Detroit Lubricator Co..... 96
Devlin Mfg. Co., Inc., Thos.138
Dole Valve Co., The..... .....115 and 116

Eagle-Picher Lead Co.....160
Evry-Use Products Co., Inc.156
Excelso Products Corp....151
Exposition, Heating and Ventilating, 4th International 154

Fairbanks Company, The..138
Fairbanks, Morse & Co.... 38
Fitzgibbons Boiler Co., Inc. 19
Fretz-Moon Tube Co.....134

General Electric Co..... 36
Gerstein & Cooper Co..... 91
Goulds Pumps, Inc..... 8
Grinnell Company, Inc..... .....Inside Back Cover

Harvey-Whipple, Inc..... 27
Hays Mfg. Co.....153
Healy-Ruff Co.....167
Hindley Mfg. Co.....162
Hoffman Specialty Co..... 23
Hotel Bellevue-Stratford...168
Hotel Melbourne 165
Hotel President 166
Hotel Stevens 168

Imperial Brass Mfg. Co...125
International Harvester Company, Incorporated.. 7

Jarecki Mfg. Co.....131
Jones & Laughlin Steel Corp. 166

Kainer & Co..... 9
Kennedy Valve Mfg. Co...158
Kewanee Boiler Corp..... 12
Key Company 165
Kohler Co. 166

Lavelle Rubber Co.....164
Linde Air Products Co., The 33

Maid-O'-Mist, Inc. 153
May Oil Burner Corp..... 25
McDonald Mfg. Co., A. Y.. 45
McDonnell & Miller..... .....Back Cover
Milwaukee Valve Company 24
Minneapolis-Honeywell Regulator Co. 28
Modine Mfg. Co..... 16
Mueller Brass Co..... 11
Mueller Co. 166
Myers & Bro. Co., F. E..... 37

Nash Engineering Co..... 46
National Boiler Improvement Co. 152
National Regulator Co.....148
Never-Split Seat Co.....142
New York Air Valve Corp. 95
Northern Indiana Brass Co.109
Nye Tool & Machine Works 161

Patrol Valve Co., The.....159
Penberthy Injector Co.... 49
Penn Electric Switch Co... 22
Pittsburgh Tube Co.....111

Reichert Float & Mfg. Co..167
Republic Steel Corp..... 5
Revere Copper & Brass, Inc. 34
Ridge Tool Co., The..... 41
Ruud Manufacturing Co.... 10

Sarco Co., Inc.....125
Silent Glow Oil Burner Corporation 89
Slater Mfg. & Engineering Co. 149
Sloan Valve Co..... 40
Smooth-On Mfg. Co.....158
South Chester Tube Co....145
Speakman Co. 35
Standard Sanitary Mfg. Co. 47
Sterling Engineering Company 152
Streamline Pipe & Fittings Co., Division Mueller Brass Co. 11

Thrush & Co., H. A..... .....Inside Front Cover
Toledo Pipe Threading Machine Co., The..... 50
Trimont Mfg. Co.....134

Uniflow Mfg. Co.....167
Union Carbide and Carbon Corp. 33

Vogel Co., Jos. A..... 3

Walworth Company 172
Warnock Mfg. Co.....164
Warwick Corporation, The.166
Waterfilm Boilers, Inc.....150
Watts Regulator Co.92 and 93
Wayne Oil Burner Corp...155
Worcester Brush & Scraper Co. 163

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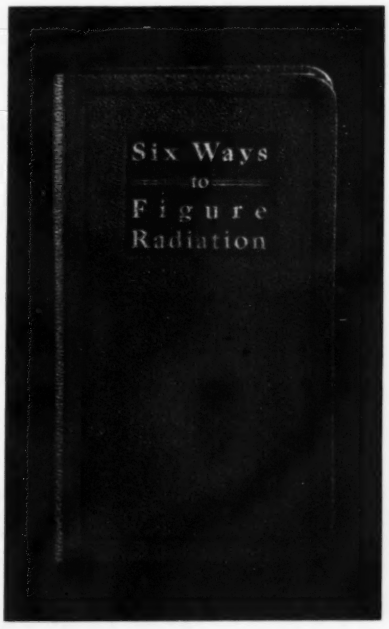

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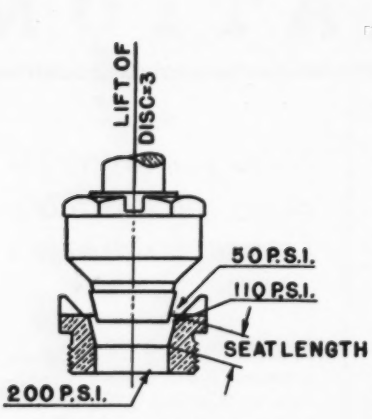
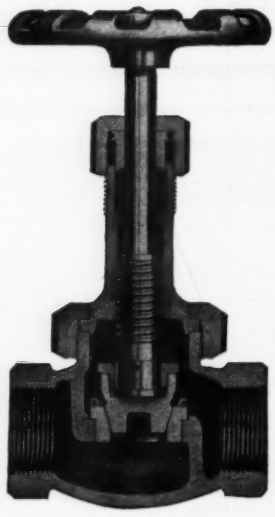


PLUG TYPE DISC
FIG 260-P—300 LBS.
FIG 245-P—200 LBS.



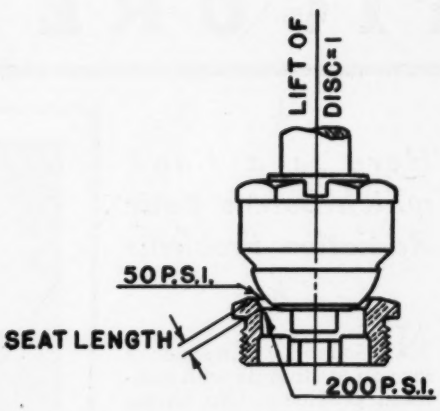


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FIG 260—300 LBS.
FIG 245—200 LBS.

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